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MANAGING SELF-DISCLOSURE IN SOCIAL NETWORK SITES (SNSs): A
TECHNOLOGY AFFORDANCES PERSPECTIVE ON PRIVACY BOUNDARY
MANAGEMENT

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ABSTRACT OF THE DISSERTATION

Managing self-disclosure in social network sites (SNSs): A technology affordances
perspective on privacy boundary management

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Social network sites (SNSs) help satisfy the human need to build connections but fulfilling such need generates privacy costs. Drawing on a perspective of technology affordances (Gibson, 1979) and communication privacy management theory (CPM) (Petronio, 2002), the project proposed ways to conceptualize affordance of privacy of SNSs as to how SNSs enable users to manage information boundaries and to make self-disclosures. Reflecting on the characteristics of SNSs that grant one not only information ownership but also information co-ownership, the project described patterns of how SNS users coordinate self and other-generated information boundaries and examined how this boundary coordination influences self-disclosure outcomes. The goals of categorizing information boundary management into these ways were twofold. First, the coordination of self and other-generated information boundaries reflects on users' needs for privacy and connectivity differently in a way that the coordination of other-generated information boundaries involves more comprehensive considerations of privacy, connectivity, and information ownership than the coordination of self-generated information boundaries. Second, the coordination of other-generated information boundaries, although meant to

protect privacy, can function to signal risks of privacy violation and eventually limit motivations for self-disclosure. In this project, to examine the link between information boundary coordination and self-disclosure outcomes accurately, actual SNS users (Facebook users) were recruited and their behavioral data related to boundary coordination and self-disclosure were retrieved using Facebook API (Application Programming Interface). Findings show that the need for privacy positively influences some patterns of self-generated information boundary coordination but negatively influences a pattern of other-generated information boundary coordination. The need for connectivity did not influence the coordination of either self or other-generated information boundaries. From this result, the role of the need for connectivity in shaping individuals' desire to engage in information boundary management is discussed. The project also found different functions of the coordination of self and other-generated information boundaries in self-disclosure patterns in SNSs. Although coordinating information boundaries is supposed to reflect individual efforts to protect privacy and to make more self-disclosures, the coordination of other-generated information boundaries decreased the depth of self-disclosure. The coordination of self-generated information boundaries did not influence the depth of self-disclosure but increased the breadth of self-disclosure. Elaborating information boundary coordination that may reflect needs for privacy and connectivity in different fashions will provide a better understanding of affordance of information boundary management in SNSs. Additionally, the unintended impact of information boundary coordination on self-disclosure can contribute to expanding knowledge of SNSs' affordances to consider in-depth communication (beyond better known affordances such as association).

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Chapter 1: Introduction

Social network sites (SNSs) have created a venue for relationship maintenance and expansion, used by billions of people (Stutzman, Gross, & Acquisti, 2012). Through personal websites in SNSs, people can share personal information with individuals from a variety of networks (boyd & Ellison, 2007). The usage of SNSs has increased rapidly, reaching 69% of American public using SNSs as of 2016 with 79% of online adults using Facebook specifically, followed by Instagram (32%) and Twitter (24%) (Pew, 2016). Among American SNS users, the younger adults are more likely to adopt SNSs, with 86% of adults aged 18-29 using at least one SNS. The frequency of visiting SNSs is also prominent. For Facebook, 76% of users reported going on the site at least daily (Pew, 2016).

A body of research has emphasized benefits of SNS use in terms of promoting individual and relational satisfaction, including the maintenance of social capital (Ellison, Steinfield, & Lampe, 2007), impression formation (Back et al., 2010), and individual well-being (Steinfield, Ellison, & Lampe, 2008). However, the research seems less clear when it comes to the benefits and concerns of self-disclosure to the public, which is a large part of what many people do as they communicate in SNSs. This self-disclosure tends to be influenced by various privacy concerns (Adjerid, Acquisti, Brandimarte, & Lowenstein, 2013). For instance, disclosing personal information without careful consideration of targets can result in embarrassment (Gross & Acquisti, 2005), inappropriate reputation management (boyd & Ellison, 2007), and the potential loss of job (Wang, Komanduri, Leon, Norcie, Acquisti, & Cranor, 2011). The failure to anticipate these negative outcomes of disclosure at the moment of disclosing often leads

to regret and deletion of posts that were seemingly inappropriate or problematic (Wang et al., 2011).

Some previous research has attributed these risky disclosures in SNSs partially to features of SNSs that are designed to facilitate information sharing in regard to what to share, to what extent, and to whom (e.g., Acquisti & Gross, 2006). For example, users may inadvertently reveal more information than they want due to privacy settings that fix the default target. Research has revealed that the amount of disclosure to the public was phenomenally greater when the default setting in Facebook was set to the public instead of to friends (Stuzman et al., 2012).

Petronio (2002) focuses more on people's voluntary desire to regulate personal information flow. Through communication privacy management theory (CPM), she argues that people use their own rules for managing information boundary when revealing personal information and these rules are set to balance individuals' needs for openness and closedness. People can generate boundary access rules in a way that they have control over what information about self is disclosed and to whom (Child & Petronio, 2009). For instance, when communicating with others on SNSs, adolescents used coded language that only small circles of friends could interpret (Child, Petronio, Agyeman-Budu, & Westermann, 2011). SNS users may also use privacy features to differentiate the level of disclosures for different others, delete or edit messages, or terminally exclude some individuals from their networks (Child et al., 2011; Johnson, Egelman, & Bellovin, 2012; Wisniewski, Knijnenburg, & Lipford, 2014).

These studies show how people disclose about self, reflecting on perceptions of privacy risks and their own rules to protect information boundaries. The ways in which

SNS users control information in the specific SNS context, however, has yet to be examined. According to Petronio (2002), context is one factor that helps people adjust boundary access rules in different fashions. For example, people who purchase products on e-commerce may use pseudonyms or provide false information for using the website to help guard against risks of privacy violation by a third party. In SNSs, users participate in interactive communication with a number of audiences and thus the users should control information by regulating not only what they disclose about themselves but also what others share with them. Understanding the processes used to coordinate other-generated information boundaries is a necessary condition to manage privacy and self-disclosure in SNSs because boundary coordination requires one to negotiate boundary access rules with others and anticipate privacy risks caused during this negotiation.

To add empirical and theoretical support for the model of information boundary management and self-disclosure, the current project aims to achieve two goals. First, applying the concepts of technology affordance and communication privacy management theory, it will conceptualize and operationalize processes of privacy affordance in SNSs as condition for self-disclosures. In doing so, this project highlights the privacy affordance of SNSs from the perspectives of both information disclosers (i.e., information owner) and receivers (i.e., information co-owner). In SNSs, users need to manage boundaries for information that they create but also negotiate boundaries that others link them into. On one hand, becoming recipients of information may come with benefits of expanding connections to others. On the other hand, it may jeopardize the recipients' privacy by not actively negotiating boundaries with the others due to complicated decisions about connectivity and privacy. The ways that users employ privacy features in

SNSs may involve competing concerns about privacy and connectivity, according to the characteristics of features from the perspectives of disclosers and receivers. Thus, the relationship between the use of privacy features and concerns about privacy and connectivity will be examined to elaborate how each of these concerns encourages or discourages privacy protective behaviors.

The second goal of this project is to examine how the coordination of information boundaries as information owner and co-owner influences individuals' self-disclosure outcomes (frequency, breadth, and depth of self-disclosure). Coordinating information boundaries either as information owner or co-owner can have a different impact on self-disclosure because of the degree of authority to coordinate information boundaries from either perspective.

By proposing to conceptualize privacy management practices in SNSs, the project will make two contributions. First, examining information boundary management from both perspectives of information owner and co-owner will further an understanding of a comprehensive model for privacy management in SNSs. Second, understanding the relationship between boundary management and self-disclosure will help to understand whether SNSs afford users privacy in the process of sharing personal information. The following section will discuss how to conceptualize privacy management by applying the concept of technology affordance, and how the privacy management pattern may be related to the needs for privacy and connectivity.

Understanding Privacy Management in SNSs from the Perspective of Technology Affordances

The concept of affordance (Gibson, 1979) refers to the relationship between materialistic features of objects and people's subjective perceptions of those features' usefulness to fulfill their needs. Assessing the usefulness of any affordance resides in users' goals or interests in using it. Therefore, a single affordance can generate various kinds of approaches to use it, whereas different affordances may promote similar ways of using them (Fulk, 1993). For example, although many people find that instant messenger is an efficient tool to exchange messages privately, some of them may use it for both instant chatting and sending messages, while others use it only for instant chatting. The feature that enables this exclusive communication may be appreciated commonly by users, but the goal and intensity of use can differ depending on how much they find it relevant to their needs.

According to the concept of affordance, technological features possess their own properties that may be commonly detectable and appreciable for achieving a certain goal, though these properties may allow some leeway for adjustment and modification. The visibility affordance of SNSs emphasizes the potential of technology to enhance individuals' capabilities to visualize and connect. In SNSs, the availability, diversity, and size of audiences prompts possibilities for expanding individuals' visibility and widening connections. When it comes to privacy affordance in SNSs, people will also need to understand how to employ different privacy features to regulate visibility with a goal to gain a sense of security and control over personal information. A need to control information flow has become even more important in SNSs since they established

privacy settings that do more to force users to consider what they *share* rather than what they have to *hide* about themselves. For example, in SNSs, there are a variety of features that users can customize for mapping out audiences, editing or deleting posts, restricting access by specific others, etc.

The ways in which people regulate the visibility of self in SNSs include one's choice over what is visible about self and what about self is visible by others. Petronio (2002) proposed that, when coordinating boundaries for disclosed information, individuals who disclose (information owner) and individuals who receive the information (information co-owner) are both responsible for managing the flow of shared information. That is, both parties of information owner and co-owner should negotiate who else may have the right to have access to a shared piece of information. For interactions that occur offline where there are only a few individuals who are involved in coordinating information boundaries, designating the role of information owner or co-owner and adjusting rules for information boundary management (e.g., who else may be able to access to the shared information) will be more manageable than in SNSs. In SNSs, people may find it challenging to distinguish the role of information owner and co-owner and how to manage the shared information together. For instance, SNSs enable reciprocal communication among a number of users per a message post and thus there may not be explicit recognition of roles among individuals as information owner or co-owner. Therefore, none of the parties involved in the communication may feel they have clear authority to further reveal, hide, or delete the information. The lack of perceived authority over information may mean more opportunities to blur boundaries and to expand connections among users. However, the uncertainty in the role information co-

owner to regulate information may increase vagueness of information boundaries and thus can lead to concerns about privacy.

Given that SNS users may employ privacy features differently based on their roles as information owner or co-owner, the next step is to explore the mechanisms underlying the use of privacy features according to users' desire for privacy. The following section will discuss relationships between the use of privacy features and the need for privacy and connectivity.

Affordance of Boundary Coordination based on Need for Privacy and Need for Connectivity

Individuals' privacy state is determined by how they adjust their exposure between privacy and connectivity. The disposition to privacy indicates one's tendency to pursue independence and autonomy against dependence and belonging (Altman, 1975; Switzer & Taylor, 1983). This desire for privacy has been known to be intrinsic not only among humans but also among other animals, because maintaining a certain degree of privacy is important in securing resources for survival. In the context of privacy and disclosure, maintaining privacy is critical to restrict others from obtaining personal information for inappropriate purposes (Grimmelmann, 2009) and to avoid forming inappropriate impressions by exposing too much about self (e.g., Child et al., 2011).

The need for connectivity may be in direct tension with the need for privacy, but is more relevant to the desire for attachment to others. Prior research has conceptualized the need for connectivity as the tendency to form stable and affective relationships. It is also related to the need to belong, which may require individuals to conform to rules available in a particular context for maintaining attachment to a certain group. Thus, the

need for connectivity may indicate the tendency to loosen interpersonal boundaries, leaving room for others to reach out to oneself as well as for oneself to create linkages to others.

Because motivations for privacy and connectivity may conflict in terms of one's decisions for boundary regulation, each motivation may have different influences on the assessment and use of privacy features. First, the project assumes that the need for privacy may be an overarching motivator for boundary management efforts in general. That is, individuals who are prone to maintaining personal boundaries may tend to manage privacy features to restrict access to information. Second, and contrary to the need for privacy, the need for connectivity may be associated with individualized efforts to sustain connections to others. Therefore, the need for connectivity may prompt individuals to open up by loosening boundaries around them. Specifically, the need for connectivity may be important to understand how individuals affirm or compromise authority when managing boundaries that others create. For example, feeling a need for connectivity may lead to a reduced willingness to distinctively divide information boundaries between self and others such that one allows for others to tag him/her into these others' posts. This reduced willingness to manage others' boundaries also may be related to the relatively less authority that one has to coordinate those boundaries.

Balancing boundaries in consideration of privacy and connectivity may come with challenges that may not be resolved without individualized efforts to understand patterns and outcomes of their disclosures. Understanding how individuals manage privacy through their interactions with technological privacy affordances will help researchers better understand SNS users' privacy protection strategies, as well as help to contribute to

designing privacy tools that are more user-friendly. The following section discusses outcomes of employing privacy affordances in SNSs.

Affordance of Boundary Coordination and Self-Disclosures

According to CPM and empirical studies about self-disclosure decision making, people should adjust their disclosure in breadth and depth based on their anticipation of the rewards and costs of disclosure (Greene, Derlega, & Mathews, 2006). Erecting a strict boundary around information means that people are willing to share access to information only with specific individuals. For example, designating a target group to share a sensitive piece of information can be a way to reduce concerns that unauthorized individuals may have access to and control of the information (Child & Petronio, 2011). This customization of target groups to restrict information ownership may presumably lead to reduced concerns about sharing information. Therefore, it is expected that the more strictly people manage their information flow, the more likely it will be that they feel comfortable revealing information and that the frequency of revealing sensitive information and the general breadth and depth of disclosed information will increase.

As stated above, in SNSs, methods to manage information boundaries also involve the adjustment of boundaries that others create. In a general sense, controlling information flow via use of privacy features may engender feelings of control over privacy. On the other hand, the nature of such acts — that is, revising already-existing boundaries — may generate a sense of discomfort in the management of privacy. For example, on Facebook, even though untagging oneself from others' post may help adjust boundaries, the reaction can raise uncertainty about future boundary coordination, thus creating concerns about their exposure to unwanted others via those others' networks. Trying to coordinate boundaries of others may be associated with an increased sense of

perceived privacy risks. In turn, these perceived privacy risks may negatively influence one's motivations to share information.

This association between the use of privacy features and perceived privacy risks may relate to an important question about how SNS users perceive and choose to use the features. Because the users should balance the uses of different features to reduce privacy concerns, the reasons behind the choice of privacy features will need to be examined specifically in consideration of users' goals for using those features.

Goals and Potential Implications of the Study

This study integrates a technological affordances perspective and communication privacy management theory to conceptualize privacy management patterns on SNSs. Further, it will propose that people's use of privacy affordances in SNSs will influence the nature of their disclosures (in terms of frequency, breadth, and intimacy). The use of these privacy affordances to manage boundaries is influenced by several factors, especially people's desires for privacy and connectivity. This leads to the following set of primary research questions. First, to what extent will users of SNSs rely on different privacy affordances based on their need for privacy and connectivity? Second, how will the use of these affordances influence disclosure patterns in terms of frequency, breadth, and depth?

This project will contribute to understanding the usefulness of privacy affordances in terms of information boundary management as predicted by CPM. Little research has empirically tested the process of CPM's proposed boundary coordination in SNSs, even though the theoretical framework has been heavily used to conceptualize this process. This study will examine if people acknowledge and take advantage of privacy

affordances in accordance with boundary coordination rules in SNSs. The application of these rules, under the influence of the need for privacy and connectivity, will provide an important foundation to investigate the perceived value of SNSs' privacy features.

The remainder of this dissertation is structured as follows. The literature review in the next chapter will examine concepts of privacy and privacy affordances of SNSs drawing on the concept of technology affordance. The literature will also provide in-depth discussion of how SNS privacy features afford privacy management according to CPM's theoretical framework. Hypotheses and research questions will be proposed based on literature review. Finally, this dissertation will draw conclusions, discuss implications, and suggest directions for future research based on analytical findings.

Chapter 2: Literature Review

The literature review will start by reviewing the concept of privacy and privacy management concerns for self-disclosure in the contexts of offline and Social Network Sites (SNSs). For privacy management in SNSs specifically, the review will explore mechanisms under which privacy, disclosure, and information ownership are shaped by technological affordances of SNSs. Following that, the review will apply the concept of technology affordances to examine affordances and challenges of privacy management practices on SNSs. Then, drawing on the theoretical framework of CPM, the review will conceptualize privacy affordances in SNSs and discuss how these privacy affordances influence different patterns of disclosure outcomes in SNSs. Lastly, hypotheses will be proposed to examine the relationships among the need for privacy and connectivity, privacy affordances, and patterns of disclosure outcomes in SNSs.

Concept of Privacy

Privacy has commonly been conceptualized as a temporary state in which people protect themselves from others' access (Altman, 1975; Petronio, 2002; Westin, 1967). Altman (1975) specifically conceptualized privacy as the "selective control of access to the self" (p. 24) and it is a dynamic process of interpersonal boundary control. Westin (1967) posited that people have a need for privacy that, in concert with other needs, helps us adjust emotionally to daily life with other people. Therefore, privacy control is understood not only as a simple procedure to restrict access to self but as a dynamic interplay among individuals, their social world, the physical environment, and the temporal nature of social phenomenon (Altman, 1990; Margulis). In communication contexts, privacy is generally positioned in dialectic tension to self-disclosure, which is conceptualized as the voluntary revelation of the self to others (Jourard, 1971; Petronio,

2002). Exposing the self makes people vulnerable (Altman, 1975; Petronio, 2002), even though it can help him/her establish connections with others, build intimacy, or receive social support (Altman, 1973; Petronio, 2002). People consciously balance the tensions between privacy and self-disclosure in a way to minimize costs from the disclosure or withdrawal (Altman, 1975; Petronio, 2002).

The concept of privacy contains various dimensions related to what exactly is kept to one's self and why people may want to restrict others' access. For example, when people want to be alone, they will maintain some distance from others. When people want to remain anonymous during an interaction occurring online, they may use a nickname rather than a real name on the profile (Margulis, 2003; Westin, 1967). Burgoon (1982) divided privacy into informational, psychological, and social types. Informational privacy indicates personal rights about the disclosure of factual data. Psychological privacy indicates one's intention to regulate inputs and outputs of his/her cognitive and affective statuses. Lastly, social privacy refers to the level of public access to individuals' relational or social interactions. Burgoon's (1982) definition provides varying perspectives of privacy that can be regulated in different degrees and strategies. For example, individuals may create and post a fake email address on their SNS profile (i.e., informational privacy) to avoid being searched by unknown others, carefully choose language to filter out emotional statuses that they do not want to reveal (i.e., psychological privacy), and have interactions with only a few individuals in a place that is not reachable by unauthorized others (i.e., social privacy).

In sum, privacy may indicate the degree to which individuals monitor self on a continuum of disclosure and withdrawal in physical, psychological, and social

dimensions. In order to manage privacy appropriately, individuals should judge advantages and disadvantages of openness across different dimensions of private statuses. The following section overviews how people regulate privacy in consideration of potential risks.

Mechanisms of Privacy Risk Perceptions and Management

The ways that people determine whether to reveal, to whom, and to what extent are generally formed based on a consideration of disclosure benefits relative to disclosure risks. Prior research about how people manage privacy has centered on the procedure under which potential disclosers anticipate risks from revealing, and control the level of exposure to avoid those risks (Derlega, Metts, Petronio, & Margulis, 1993; Petronio, Reeder, Hecht, & Mon't Ros-Mendoza, 1996). Especially, these risks are considered to pertain to self, other, and relationship (Derlega et al., 1993), meaning that people should take careful consideration of how their disclosures impact others and relationships beyond themselves. Therefore, understanding target qualities or characteristics is critical for making disclosures appropriate and successful (i.e., Afifi & Steuber, 2009; Caughlin & Afifi, 2004). For example, potential disclosers may anticipate how their target will respond to their disclosures based on criteria such as perceived closeness to the target or sensitivity of topics to the target. When the target is close enough to share sensitive information with, or when the target is likely to provide emotional support in response to the disclosure, risks of disclosure to both the self and the target will be considered minimal (e.g., Greene et al., 2012).

The privacy management also involves the consideration of how to manage the shared information with the target. According to CPM, which will be reviewed in detail in a later section, individuals need to coordinate rules to regulate information boundaries

with the target. The boundary coordination occurs while information disclosers and receivers negotiate who will have access to the shared information to avoid unwanted leakage of the information. This whole process of boundary coordination can differ across different disclosure contexts. More specifically, a context where disclosure occurs may alter the nature of privacy and how people employ strategies to make the disclosure towards a particular target audience. Consider a person who needs to share part of a secret with a single family member versus several family members. S/he may be more concerned about the information being leaked out to others outside the family in the latter rather than in the former circumstance. More precisely, in the latter circumstance, although the effort for defending the privacy boundary is expected to be greater, the likelihood of privacy violation will be greater due to the lower possibility the information is kept secret among several individuals (as opposed to only one).

In addition to concerns about regulating access, the context under which disclosures occur resonates with concerns about negotiating meanings of shared messages. During typical communication in offline settings, people can more easily ascertain who their target is and are capable of anticipating how s/he would respond based on target characteristics. In addition, most communicators can instantly regulate how much to reveal or withdraw throughout the interaction. If the target does not seem to respond as they expected, they can stop disclosing or progressively reveal the information while observing how the target reacts to the disclosure. For information shared on a medium, there is little flexibility in interpreting meanings behind texts without reciprocal negotiation between disclosers and recipients, oftentimes many more than the disclosers expect, about those meanings. Palen and Dourish (2003) argued that disclosures through

a medium may necessitate mindful consideration of how others may understand the shared messages. This consideration will be especially required in the condition under which those others only have flexibility to make diverse attributions about motivations and meanings of disclosures.

In sum, the perception of privacy risks and the ways to govern personal information flow can vary depending on how much some disclosure contexts allow for control over information and its meaning to others. This particular project will focus on the characteristics of context that shape perceptions of privacy and connections, which will influence privacy management and self-disclosure outcomes. The following section will explore privacy management in SNSs. Specifically, SNSs will be explored in terms of how technological features of SNSs, as a medium for interacting with diverse audiences, influence individuals' perceptions about privacy, connectivity, and information ownership. The discussion starts with an overview of technological affordances in SNSs.

Perspective of Technology Affordances

People have a fundamental desire to balance openness and closedness. The desire to control information may be quite prominent among users of SNSs in which the users need to interact with hundreds or sometimes even thousands of individuals connected through multiple networks. Indeed, some SNSs (e.g., Facebook) have promoted a privacy policy and privacy features that users can individualize, controlling the degree of visibility of their own and others' disclosures through the use of tools to monitor, regulate, or block information flow across different others. Research has shown that SNS users have been using privacy features more, and this use of privacy features becomes more popular as the size of audiences grows (Pew, 2013). These results demonstrate that

users may feel a need to adjust privacy settings in response to concerns about the availability of their personal information to unwanted others.

Other research, however, has shown that motivations for privacy protection and actual privacy-related behaviors are not always related. For example, concerns about privacy do not closely relate to the amount of disclosure on SNSs, showing that people's desire for privacy protection may not predict the ways that they disclose (Acquisti & Gross, 2006). Furthermore, users' goals to protect privacy may go awry even when they are authorized to control what they may want to share on SNSs. Some research found that when they had more control, users tended to share more even though the objective risks of privacy violation increased (Brandimarte et al., 2010). This gap between the intention to protect or control privacy and the actual strategies for regulating information may be related to how the users understand the ways that their privacy management practices work. In order to unpack mechanisms of self-disclosures in SNSs, it will be important to understand the role of technology in shaping how people regulate information boundaries to devise conditions for self-disclosure.

According to the concept of technology affordance (Gibson, 1979), the use of different technological features can be influenced by what each feature affords one to do and how one uses them. More specifically, users of technological features find these features useful in different degrees based on how the features can satisfy their diversified needs. The values or meanings of features can be directly perceived and these features can enhance different action possibilities. Each technological feature possesses a particular affordance for individuals to achieve a particular goal using this affordance. For example, in SNSs, people are expected to maintain and expand connections with

others as broadly as possible whereas the degree to which the people share about self is controllable by use of privacy features.

Applying the technology affordance concept, the following section will inquire into conceptualizing privacy affordances in SNSs. The discussion will focus on the needs of and ways in which people manage their visibility and association in SNSs, which may then influence their disclosure behaviors. Following this, the review will explore how the whole process of managing visibility and association in SNSs is operationalized using communication privacy management theory (CPM).

Concept of Technology Affordances

“Affordance” is a term for understanding the utility of a certain object because using an object reflects its value as a good (Gibson, 1986). Gibson referred to horizontal terrestrial surface as a symbolic feature to explain what it affords to living things in a given environment. He emphasized the role of an object in enabling different action possibilities. The object exists apart from the people and the ways that the people perceive the object can vary in terms of how much the object may be useful to carry out their goals. Conducting a role in supplementing actors to achieve goals, a particular affordance should include some characteristics that the actors may pay attention to, be willing to use, and appreciate (i.e., Treem & Leonardi, 2012). Gibson’s postulation about affordances has been applied to Norman’s (1990) discussions, which emphasized an affordance’s consistent value rather than its flexibility in usage as differently assessed by users. Norman (1999) presumed that an affordance should signal to users what the technology is made for and how it is used. Thus, the role of designers of technology may be important to present its affordances to users quite explicitly.

Hutchby (2001) proposed more flexible interpretations of affordances, suggesting that technological affordances emerge within the interaction between the technology and users. This view emphasizes a relational view of affordance, proposing that technology affordance does not exist solely by itself. Instead, the affordance is formulated, developed, or degraded while users interact with the technology. Users may find some affordances being full of action possibilities while they may also find them constraining actions to accomplish their goals. Therefore, an object can be assessed and used differently based on its potential to help users manage goals. For example, people who want to expand and maintain connections with others may be less willing to monitor or untag what others share about self than those who do not care about those connections as much.

The relational perspective of affordance also postulates that, when the technology may not fulfill users' needs, the users may supplement the usage using another affordance, or adjust the ways that they use these affordances (Gibson, 1986; Treem & Leonardi, 2012). For example, for people who find that too much cognitive work is needed to customize communication channels for different targets in SNSs, using instant messenger or crafting messages that are interpretable by expected targets can be an alternative to supplement the usage of privacy features. Thus, from the relational perspective of affordance, the value of a technology feature is prone to be different because users may have different goals and interests in managing this affordance.

The following section describes affordances of SNSs in terms of how these affordances enhance the visibility and association of individuals. Following that, the

ways in which people regulate the visibility and association in SNSs will be discussed as key to managing personal information boundary for self-disclosures.

Visibility and association affordance in SNSs. Treem and Leonardi (2012) proposed that social media have a great potential to manage the presentation of individual data through affordances of visibility, association, persistence, and editability. The affordance of visibility indicates the potential of technology to strategically visualize one's behaviors, knowledge, preferences, and communication networks to others (Treem & Leonardi, 2012). In their descriptions of SNSs, boyd and Ellison (2007) emphasized the visibility and association afforded by SNSs by noting that social network sites (SNSs) allow individuals to "1) construct a public or semi-public profile within a bounded system, 2) articulate a list of other users with whom they share a connection, and 3) view and traverse their list of connections and those made by others within the system" (boyd & Ellison, 2007, p. 211).

As that definition of SNSs implies, the goal of using SNSs is to develop and maintain networks through weak and strong ties (Ellison et al., 2007), accentuate the formation of social networks through sharing a personal profile, and have various social interactions (Lee, Moore, Park, & Park, 2012). People who engaged in active disclosure activities, whether posting information about self or commenting on others' posts, felt a greater sense of social capital than others who passively consumed what others shared (Trepte & Reinecke, 2013). This perception of social capital may be associated with how much individuals manage different tie strengths, through sharing an appropriate level of information with others. Borrowing from Altman and Taylor (1973), reciprocating

information is likely to increase perceived intimacy with others while they exchange information of different breadth and depth.

The reciprocal nature of interactions in SNSs may be unique in terms of the dynamic communicative environments created by both known and unknown others. SNSs encourage disclosing about self implicitly and explicitly to many others, affording individuals a variety of options to make self available to others (i.e., visibility affordance of SNSs). For example, individuals may post emotions, thoughts, or opinions on their Facebook wall to have direct interactions with selected others, but they additionally may make some of their profile information visible to the public to reserve room to build further connections.

Making self available through various networks increases the chance that others form impressions of him/her. For example, individuals' own posts, posts of others' comments, and liking others' posts in Facebook can all play an important role to increase the visibility of self. Individuals who present self by revealing connections with others have formed preferable impressions, which may advance their reputation (e.g., Donath & boyd, 2004). According to the evolutionary perspective of indirect reciprocity, individuals can earn relational benefits by taking advantage of reputations built by helping others. The logic of indirect reputation predicts that individuals may allocate resources to many others, who then turn into sources to improve their own reputations (i.e., Nowak & Sigmund, 2005). These reputations can indirectly increase the chance that individuals will receive help if needed.

This mechanism of indirect reciprocity may occur in SNSs based on one's goal to reserve resources to build connections with others while one engages in different types of

interactions. Although increasing one's activities may lead to more costs of exposure, s/he can empower him/her with relational resources to be used later. Thus, people may not be always rational when making decisions—not only because of the lack of their cognitive abilities to process all relevant information but also because they are not always prone to pursue immediate benefits over risks. That is, there are social or individual factors that may pressure people to make decisions that do not necessarily maximize their own interests. For example, people tend to reciprocate others' gifts even when they do not like the gifts, and people tend to comply with norms of reciprocity for another's disclosure in both offline and online settings. Responding to others' requests, even when they contain some risks such as the engagement in unplanned disclosure in response to another's disclosure, may indicate individuals' motives to prioritize other values rather than personal concerns for behavioral decisions.

Given that there are social and relational factors that seem to bias the rigorous assessment of risks and benefits of disclosure, regardless of how much these factors are controllable, it makes sense that hypotheses suggesting a relationship between disclosure and potential disclosure risks have had mixed results. This may be especially true when the estimation of risks is complicated, for instance, when people need to make disclosures to diverse audiences and thus need to endure the possibility of disclosing to individuals who may not appreciate the revelation. The following section describes more specifically how SNSs' affordances may constrain individuals' abilities to regulate personal information.

Privacy concerns in SNSs due to affordances of SNSs. The introduction of SNSs as a venue for interpersonal networking has given people freedom of expression

and communication. Research has found significant evidence of social capital that individuals may develop through networking with diverse people (e.g., Burke, Kraut, & Marlow, 2011; Ellison, Steinfield, & Lampe, 2011). While granting interpersonal bondage with others, however, SNSs may constrain people to effectively communicate meanings of their own messages. For example, information revealed on the web may diffuse in unanticipated ways that may influence privacy (e.g., Solove, 2007). On an interpersonal level, people may face some challenges to determine what they may share with others, who often may be unspecified (e.g., boyd, 2008; Marwick & boyd, 2010).

To say a target is unspecified means that people may not be able to accurately define an actual audience for their disclosures and do not know how their information may be used or interpreted (i.e., Anderson, 2006). For example, customers shopping online often do not know how their personal information disclosed on the site may be used, which can lead to concerns about unwanted targets or misuses. Based on how well these consumers understand often complex privacy policies and the extent to which it ensures their privacy, they may be in a position to make better or worse decisions about whether to reveal personal information and to what extent (i.e., Metzger, 2007). In addition, people who are enrolled in an online dating site should update their profile information for an “imagined audience” who may possibly become their partner in the future.

When it comes to SNSs, people’s understanding of their disclosure audiences may vary significantly (Marwick & boyd, 2010) due to the size and other varied characteristics of audiences. The features of SNSs that tend to encourage people to exchange information with a variety of others may collapse boundaries of different

audience characteristics and make an accurate understanding of target qualities difficult. This “context collapse,” meaning that social media flatten audiences across multiple social contexts, proposes that people can experience challenges of self-presentation when making disclosures to targets with diverse characteristics (Marwick & boyd, 2010).

boyd (2011) argued that the realm of privacy regulation in SNSs should be examined in consideration of the relationship between technology and an individual’s position within a network. More specifically, the technology may make networks more salient both to those watching and those being watched. The saliency of one’s position, especially from the perspective of those being watched, can provoke concerns about surveillance. These concerns about surveillance may incur because information disclosed on a medium tends to become a primary source to represent self and information receivers make judgment about him/her via this information. Palen and Dourish (2003) argued that disclosures on a medium may increase tension between self and information about self. The information posted on the web, although only informing a small portion about self, inadvertently tends to become a key source to form impressions of this person among viewers. For example, research has revealed mishaps that individuals encounter when sharing information on social media because of the gap in perceiving the appropriateness of disclosed content between disclosers and recipients (Forest & Wood, 2012). In short, the perception of surveillance may complicate decisions about disclosures, making one decide either not to share at all or become attentive to find messages for general audiences.

To the extent that people feel a need to manage privacy and connectivity simultaneously, they may use some rules to control information flow. Petronio (2002)

noted that people desire control over their information and employ various strategies to restrict others' access to it. The ways that individuals exercise control in SNSs has received significant interests primarily because of the inconsistency between individuals' concerns about privacy violation and the amounts of information they post on SNSs. Dinev and Hart (2006) argued that control should be one of the factors that determine individuals' privacy state but control itself does not necessarily mean privacy. Thus, control may not always assure privacy and vice versa. To better grasp how individuals control privacy in the specific context of SNSs, this project will contextualize privacy affordances by examining the associations among privacy, connectivity, and use of different privacy features. Prior to examining these associations, the review will delve into privacy management rules and how these rules may be applicable to privacy management in SNSs, applying CPM (Petronio, 2002).

Affordance of Privacy in SNSs

With regard to online communication generally and in various social media more specifically, much interest has been directed towards how a specific medium or privacy tool lets people control information flow and present themselves favorably to others. For example, in SNSs such as Facebook, in which people often aim to expand and maintain their networks (boyd & Ellison, 2007), sharing about self can generate benefits of forming positive impressions and relational ties, while creating risks of privacy violation at the same time. Thus, people may need to balance tensions surrounding revealing (i.e., earning benefits from forming relationships with diverse audiences) and concealing (i.e., taking risks of privacy violation when unwanted others get access to the information). Especially considering the nature of interactivity encouraged within SNSs, people may

need to optimize the level of disclosure in consideration of both privacy and norms about what is or is not being shared.

As Bregman and Haythornthwaite (2001) noted, visibility refers to the “means, methods, and opportunities for presentation,” and it reflects actors’ concerns regarding how to present self (p. 5). People can make themselves visible to others in different degrees through SNSs, with varying goals, including show-off performances or hiding information that might ruin their well-established images (i.e., with a goal of self-presentation). For example, Gibbs et al. (2013) examined the pattern of knowledge sharing within an organization through the use of social media, finding that people maintained dialectic tensions in visibility-invisibility, engagement-disengagement, and sharing-control strategically to make themselves available or to share resources selectively online. The researchers found that people may set their Skype icon to be invisible while still being present to implicitly notify that they are unavailable. They may also use technological tools (e.g. Google Docs) to share confidential sources with specific others rather than with all individuals within the network, with a goal to distinguish between individuals who may be more or less relevant and interested in sharing those sources.

Decisions about what to make visible to others and to what extent are largely controllable in SNSs, since technological tools to manage personal information have advanced enough to enable people to adjust privacy settings between public and private, to designate targets, or to untag others’ posts should one be associated with them. These technological affordances that give people choice over what to reveal with different degrees of visibility to various audiences can enable them to regulate the level of

exposures across targets. In addition to controlling who will co-own personal information, according to CPM, people may desire to control how others understand the information in ways that they intend to convey. Although CPM has not yet specifically explored this aspect of controlling others' views of personal information, either in the theoretical postulation or through empirical research, controlling information in view of others can be important in forming appropriate impressions about others. According to Goffman (1959), people have a tendency to adapt their behaviors in consideration of their audiences, regardless of whether they are actual or imagined audiences. Therefore, people's desire to control information may involve overlapping concerns between others' access to their information and others' impressions of self. For example, making targeted disclosures across different target audiences can fulfill both goals of restricting access to information from unwanted others and sharing information appropriately with different audiences.

Prior research that examined privacy protection strategies in SNSs has often studied what the motivations for privacy practices are and how actual privacy management practices are predicted by these motivations. However, much research has conceptualized different types of privacy management practices (e.g., change of privacy settings, deletion of post, or targeted disclosures) singularly as boundary coordination. This approach, which characterizes different privacy practices as subsets of one, may not fully explain how users manage their usage given different available privacy affordances and why they may be more or less likely to use certain affordances instead of others.

In addition to examining the direct relationship between motivations for using privacy features in SNSs (i.e., need for connectivity and need for privacy) and the use of

privacy features, this current project aims to investigate if this relationship may be moderated when individuals need to adjust privacy settings as they are situated in the position to manage information boundaries that others create (i.e., as information co-owner). Due to the reciprocal nature of interactions pursued in SNSs, the privacy protection in SNSs can involve proactive monitoring and controlling of one's identity and information that may be revealed by others. For example, users of SNSs are often connected via social tagging for photographs or comments that others post, making those users' identities accessible to not only the users but also the others' network. Thus, screening what others share about self and selectively filtering out these others' posts may be important to avoid boundary turbulence and inappropriate impression formations. In short, censoring information that one may inadvertently co-own via others' disclosures involving self may be an important consideration for privacy protection in SNSs, in addition to the boundary coordination process for information revealed by self. Examining the use of privacy features from both perspectives of information owners and co-owners can help provide a more comprehensive approach to privacy affordances in SNS.

The following section will review conceptualizations of the comprehensive boundary coordination process in social media as proposed by CPM, followed by a more detailed conceptual distinction of boundary coordination in SNSs from the perspectives of information owners and co-owners.

Theory of Communication Privacy Management

As noted earlier, the process of privacy management refers to individuals' management of dialectic tensions between revealing and concealing in consideration of self, other, and the relationship between them (Derlega et al., 1993). This section will

specifically use CPM to explain processes under which people coordinate their information boundaries as a way to manage information flow across different target audiences in SNSs. Next, the review will expand discussion about how privacy features of SNSs may afford the information boundary management with regard to making disclosures to the right target, applying the concept of affordance (Gibson, 1986).

Communication Privacy Management Theory (CPM). A series of decisions are involved in the process of revealing about oneself (Afifi & Caughlin, 2006; Greene, 2009; Petronio, 2002), especially when information is considered private. CPM (Petronio, 2002) proposes that disclosure comes with feelings of vulnerability and that people enact disclosures after conscious assessment of costs and benefits from disclosing. In CPM, people are rational decision makers when it comes to analyzing risks and benefits of disclosure and enacting disclosures based on this analysis. Although self-disclosure is a process of revealing about self, CPM proposes that self-disclosure decisions revolve around the assessment of recipients in terms of how well they may co-manage the information; that is, do they coordinate the boundary of shared information safely and consistently. This section introduces a general theoretical framework of CPM about the process of disclosure decisions and information boundary management.

Privacy and disclosure decisions. In CPM, privacy and disclosure exist at the opposite ends of a dialectic (i.e., Altman, 1975; Petronio, 2002). As Altman (1975) and Westin (1967) argued, CPM posits that people have the desire to make themselves public while pursuing privacy at the same time, and disclosure involves their decisions about to what extent they make themselves available to others (Petronio, 2002). Therefore, they need to simultaneously consider various tensions that influence motives to disclose or

withdraw. CPM postulates that personal information is considered private when it reflects issues that matter deeply to a person. Once the information is shared with a target, the target becomes responsible for co-owning the information (e.g., Allen, Coopman, Hart, & Walker, 2007; Joyce, 1998; Petronio, 2002). Thus, the information is not solely about self, but CPM emphasizes the role of recipients when it comes to the regulation of information flow (Petronio, 2002).

Revealing private information brings about feelings of vulnerability. Boundary structures are typically established before revealing private information, as a way to control the risks. Personal boundaries are used to manage private information about self but collectively held boundaries pertain to original information owners and co-owners. Therefore, collectively held boundaries are erected once disclosure occurs. These individual and collective boundaries vary in permeability, ranging from relatively loose to very tight boundaries.

The tightness of permeability reflects the extent to which individuals want to keep the information private. Thus, people regulate the permeability of these boundaries based on the estimation of potential risks if the information is revealed. When few risks are expected, they can loosen the boundary of information so that the information is accessible to more individuals. On the other hand, if one considers a piece of information too sensitive or private (e.g., childhood history of sexual abuse), then he or she has the right to claim that no one else can share this information. The boundary permeability might change depending on whether people anticipate the disclosure costly to themselves and/or recipients (e.g., Caughlin & Golish, 2002; Caughlin et al., 2000). For instance,

people who are concerned about identity threat will choose what information about self they reveal on the personal profile in SNSs.

After disclosure occurs, people tend to develop their own rules of boundary coordination for themselves and the target to regulate the information flow together. The following section will describe how people coordinate information boundaries based on principles of privacy management postulated by CPM.

Principles of privacy management. CPM proposes five principles of privacy management in regard to when access to personal information is granted or denied (Child & Petronio, 2011; Petronio, 2002). The first principle states that people equate ownership of personal information with any other good they can possess. In CPM, people are expected to retain the ownership of their information even when it is revealed to others. The ownership in CPM refers to rights and responsibilities by possessing information, and recipients become involved in the management of information as co-owners. The second principle is that in addition to owning information, people believe they have the right to control the flow of the information to others. For example, when people post some information about themselves on SNSs, they have priority in granting authority to any others to access the information.

The third principle of privacy management proposes that people develop and use privacy rules to control the flow of information to others. These rules will be developed based on five decision criteria: culture, gender, motivation, context, and cost/benefit ratio. These criteria explain the phenomenon where people become more or less open based on if these criteria highlight some beneficial or risky aspects about disclosure. For example, various cultural criteria help to determine the appropriate level of openness, which may

differ across cultures. The risk-benefit ratio criterion is used when individuals assess the potential risks relative to the anticipated benefits of concealing or revealing. If risks of disclosure are likely to be higher than benefits, individuals will avoid disclosing the information. For instance, people who value relational development and maintenance more highly than protecting privacy may be more likely to open up about themselves in public.

The fourth principle of CPM notes that once people reveal their personal information, or after others have access to the information, the information is regulated by collective but not individual ownership. Thus, people who have become co-owners of the information are also responsible for regulating the flow of information, based on a mutually agreed-upon boundary permeability rule. The original owner and co-owner(s) coordinate the management of information through boundary permeability rule, boundary ownership rule, and boundary linkage rule (i.e., Child, & Agyeman-Budu, 2010; Petronio, 2002). These rules can be negotiated implicitly or explicitly, and they are used to determine whether a third party may have access to the information.

The boundary ownership rule is that original disclosers have the right to own and to control who will have access to the information. Having ownership of information not only indicates that the original discloser has the right to own the information but also indicates that s/he expects the information to be interpreted by targets as s/he intends to. Therefore, the boundary ownership may encompass people's concerns about both information privacy and impression management. The boundary permeability rule is about the regulation of who else in addition to the original owners and co-owners may have access to the information. The boundary linkage rule is about assigning additional

co-ownership to others beyond the original owners and co-owners. These others can be those who are privy to the information based on criteria such as how much they are qualified to share the information with (e.g., based on relational intimacy).

The fifth principle of CPM concerns the violation of boundary regulation rules among information owners and co-owners. If anyone fails to coordinate the privacy rules as intended by the owners, disruption will occur, which will lead to boundary turbulence. For example, in SNSs, a person's friends might unwittingly tag photographs of himself/herself to the public or friends of those friends, thereby leasing access to those who were not intended to possess it. This boundary turbulence can be revisited among owners and co-owners to adjust rules for boundary permeability, ownership, and linkage rules to prevent further turbulence.

Principles one to three proposed by CPM can help understand strategies to evaluate disclosure decisions prior to disclosure. These principles may be used to estimate potential risks expected when disclosure occurs. Principles four and five argue that, after disclosure, the original owners and co-owners cooperate to regulate the information flow through rules regarding creating linkage between the information and others, sharing ownership of information, and determining if the information can be further revealed to which additional recipients.

The following section reports results of studies that apply CPM, especially about how people manage dialectic tensions of disclosure and withdrawal prior to disclosure and how they negotiate rules to coordinate the information boundary after the disclosure. These processes of disclosure and boundary coordination will be examined in both offline contexts and SNSs.

Individual information boundary management. CPM has been used mostly as a theoretical framework to understand a common pattern of boundary management processes within individuals (Petronio et al., 1996) and within groups (e.g., Serewicz & Canary, 2008). These studies show that individuals sharing information will attempt to manage dialectic tensions to maintain a certain level of exclusivity from others to manage risks from disclosure. The calibration of risks may be based on how the disclosure may harm not only the self but also others and the relationships with those others. At an individual level, people should estimate risks of disclosure by themselves and then adjust the permeability of information boundaries during the process of revelation. For instance, Petronio et al. (1996) showed that children who were sexually abused gradually disclosed their secret to manage their information boundary, navigating circumstances and anticipating target reactions. These individuals consciously monitored any risks from disclosure through progressively revealing and regulating the permeability of their information boundary accordingly.

A few studies have examined dialectic tensions surrounding privacy at a dyadic level. For example, topic avoidance is a type of dialectic tension between what to share or not with a specific person when the goal is to avoid relational conflicts. Topic avoidance in itself implies that individuals in a dyad are willing to keep specific information untold to avoid further conflicts. This phenomenon suggests that each party's boundary permeability is tightly regulated for specific information, because both parties understand the rule of what not to share. For example, Caughlin and Golish (2002) explored the ways that dyads—such as couples as well as parent and child—manage tensions between revealing and concealing in consideration of whether certain disclosures can harm the

relationship. The results of this study show that people acknowledged some topics that their partner (i.e., either boyfriend/girlfriend or parent/child) may try to avoid communicating although maintaining this tight permeability around those topics may reduce relational satisfaction.

Caughlin and Afifi (2004) conducted a similar study but further examined whether the association between topic avoidance and relational dissatisfaction is moderated by reasons for topic avoidance. They found that as one party avoided the discussion about some topics for relational protection, relational dissatisfaction was lower than others who had little motivation for relational protection. The tendency to remain silent about certain topics can be individuals' own boundary management motives. At the same time, each person within a dyad manages his/her information boundaries considering both self and others. Understanding others' expectations about what to communicate will be important to reduce disclosure risks such as relational dissatisfaction.

Protecting privacy may not only occur at an individual level but also occur while disclosers (i.e., information owner) and recipients (i.e., information co-owner) regulate information flow together. The following section examines how the owner and co-owner of information coordinate boundaries of shared information.

Collective boundary management and turbulence. According to CPM, information owner and co-owner share the responsibility to manage the information flow. Some studies have examined how people coordinate rules to manage privacy as one way to manage tensions between revealing and concealing to different groups. Serevicz and Canary (2008) presented the existence of boundary regulation rules applied within a

group and between two distinct groups to show a need for balancing dialectic tensions both across individuals within a group and between different groups. In Serevicz and Canary's (2008) study about how family members coordinate boundaries of their private information, family members needed to figure out rules not only about what to share within the family, but also about how to co-own information between family and people outside the family.

In coordinating boundaries at collective levels, the potential costs of one's revelation are whether there may be boundary turbulence. That is, whether a third party that may not be qualified as a recipient obtains the ownership of the information. For instance, Petronio, Sargent, Andea, Reganix, and Cichocki (2004) examined pathways of boundary turbulence when family and friends, as healthcare advocates, wittingly or unwittingly reveal the patient's personal information during a doctor's visit. These advocates' responsibilities to protect the patient's privacy versus to report some helpful information to the doctor may pose tensions surrounding revealing. As their judgments about what is appropriate to share with the doctor can be inconsistent with expectations of the patient, boundary turbulence can occur.

The risks of turbulence will increase as the size of a group possessing the information ownership increases, creating challenges to agree on the rules of boundary management. For example, within an organization, compared to a sector including a few employees, a sector involving a large number of employees will face greater threat of information being leaked. In the latter sector, the characteristics of individuals will be more versatile and the interests of keeping the information private can vary as well.

In sum, maintaining dialectic tensions and coordinating information boundaries both hold consideration of whether disclosure will produce outcomes that are costly to the self and recipient (s). One of the burdens on disclosure recipients is to avoid boundary turbulence, thus to protect the information not to be shared with an unauthorized individual. To reduce risks from boundary turbulence, both original disclosers (i.e., information owners) and recipients (i.e., information co-owners) should negotiate rules about what can be further shared, to what extent, and with whom.

In SNSs, disclosures result in others' access to the information and people's goals are to prohibit unnecessary access of the information to unwanted others. Thus, one of the foremost methods to exercise control over the flow of information may be to determine who the target audience will be and to restrict the access of the information to this selected audience. The following section will discuss how people manage their information boundaries in SNSs based on some empirical study results applying CPM.

Individual information boundary management in SNSs. In offline communication contexts, one major goal of privacy management is to manage one's information boundary through conscious efforts to balance revealing and concealing. Disclosures in SNSs also involve these processes to regulate tensions surrounding disclosure and withdrawal. Personal information posted on one's own home page is viewable by others as well as accessible to third parties, and s/he should be mindful of this exposure to known or unknown others. In addition, understanding norms of sharing certain information with particular audiences (including potential future audiences) and making disclosures upon the consideration of relevant norms will be important to avoid creating negative impressions. For instance, people may need to exercise their boundary

permeability rule to abstain from mentioning certain topics not only because the disclosure can be face-threatening (risk to self) but also because sharing these topics can unwittingly enforce the target to share similar information or to respond back to show at least some signs of attention to the disclosure (risk to target).

A handful of research has used CPM to examine patterns of privacy management in SNSs and this research has emphasized the role of “unintended audience” in influencing the extent to which people are conscious about privacy. As discussed in the previous section, making disclosures online may come with concerns regarding how to define target audiences. If people do not have enough information about a potential target, as well as the target’s expectations or characteristics, balancing tensions between disclosure and closedness will not be as simple as when they know the target and this target’s expectations about what can be shared. In a study that examined conditions under which people may employ privacy-enhancing strategies (Stutzman & Kramer-Duffield, 2010), the degree to which people tightened their information boundary in part depended on who they imagined the target would be. When expectations about the proportion of an unintended audience in comparison to an intended audience increased, participants were more likely to restrict the message to friends only rather than to keep it open to the public.

When anticipating diverse target responses, it is also possible that people may take steps to regulate the permeability of the information and limit the content of disclosures for a general target rather than only for specific individuals. For example, when people expect their target to be colleagues, friends, family, and a general audience, they will need to either frame messages differently for different target groups or they may

have to find a topic that those targets can commonly appreciate (Stutzman & Kramer-Duffield, 2010). Sticking to this disclosure pattern that allows for sharing only limited information about oneself may not be helpful to further strengthen relationships with others.

After disclosure occurs, people need to start coordinating information boundaries as they and their targets share the ownership of the information. For example, in SNSs, individuals tend to become information owners as they post information and they become co-owners as they become receivers of other disclosers. The next section will discuss the process of boundary coordination and turbulence, which occurs when boundary coordination rules are violated.

Boundary coordination in SNSs. SNSs enable individuals to interact with sizeable targets. Thus, when coordinating information boundaries in SNSs, individuals may pay careful attention to how to segment targets for different disclosure activities. The concept of target in online contexts can be divided into two broad types: targets that people can specify and targets that people may not be able to specify. The former may indicate those with whom potential disclosers want to exchange some information. The latter may indicate what one discloses about oneself in exchange for pursuing other goals (e.g., online shopping or finding a partner online).

Metzger (2007) examined participants' propensity to disclose their first and last name, postal address, or education level in three different websites that pursue a different level of privacy policy (i.e., strong, weak, or no privacy policy). In this study, Metzger proposed that people who engage in online purchasing can coordinate the boundary of information as they affirm the privacy policy of the website that they visit. To examine

participants' rules for boundary coordination, Metzger captured their clickstream data while they browsed the website, and then investigated whether the participants recalled viewing the privacy policy. Her study found that people made decisions about revelation by active and voluntary assessment of risks in response to different degrees of privacy. Investigating privacy policy is helpful to understand how one's information will be used and how much a particular site maintains thick or thin permeability of this person's information boundary.

In SNSs, the level of privacy regulation may also partly depend on the SNS's privacy policy and the extent to which people expect that their information posted on SNSs can be used by a third party as a source for developing ads or apps (Stutzman et al., 2012). The goal of privacy regulation in SNSs may also include the management of information flow for different target audiences. In SNSs, these target audiences, called intended targets for disclosures (i.e., those whom individual want to share information with) (Stutzman & Kramer-Duffield, 2010), may be of more important consideration than expected targets (i.e., those who are likely to have access to information) prior to disclosure. The goal of self-disclosing in SNSs is related closely with promoting interactions and relational maintenance by sharing information rather than regulating information against unwanted others. Therefore, a prior concern regarding privacy management may be people's perceptions of how intended others perceive them and how to share information about them with these others to make good impressions. As CPM's ownership rule proposes, people may want to have the right to control their information and to have others perceive their disclosures as they do (Petronio, 2002).

A handful of studies have used CPM to extend the discussion of privacy management towards target audiences in SNSs. Child et al. (2011) examined how people's privacy management rules may change as bloggers retrospect their posts and anticipate costs from sharing these posts with the public. The authors specifically examined the ways in which people manage boundary access rules and found that bloggers adjust, modify, or scrub privacy rules related to privacy management triggers such as impression management, identity safety, relational management, and fear of legal or disciplinary ramification. Among these triggers, bloggers were most concerned about making good impressions and keeping their identity safe. In this study, the researchers found that bloggers proactively deleted posts when anticipating risks from having those posts accessible to future audiences. That is, they made assessment of risks if they retain blog posts and took actions to restrict ownership of their posts to themselves and to avoid turbulence by removing them from future audiences.

Child and Agyeman-Budu (2010) examined whether people's privacy management rules may differ when blogging according to their individual personality attributes such as self-monitoring tendency and concerns for enacting socially appropriate interactions. The authors specifically examined how people manage boundary access rules by using communicative codes that are acknowledgeable by specific individuals. For instance, as high self-monitors have greater concerns about how others view them, they had more defensive ownership than low self-monitors, using coded language when blogging. Further, high self-monitors specified who can and cannot have access to their information, affirming the ownership rule for information that they posted on their blogs.

In SNSs, one potential challenge regarding information boundary management may be that the rule about defining ownership and co-ownership of personal information is not clear enough to determine who has control over information. Besmer and Lipford (2010) examined people's perceived concerns about being a co-owner of others' information when they are tagged to a photo that includes their image. In this study, participants reported that they barely had any right to request the removal of the photo as it is owned by the person who posted it. Furthermore, participants believed that untagging the photo can offend the poster of the photo, thus they would rather not take an action to negotiate rules about how to manage the post that others uploaded. Even when the participants could untag the photo, it is linked to others who have connections with the poster. Therefore, disconnecting this linkage between them and the photo may not be enough to distinguish information boundary, possibly resulting in giving up a role as information co-owner (i.e., negotiating rules about who will have access to the information with the original owner). These results demonstrate that the original owner of the post has a greater sense of control than co-owners over rules about information ownership.

Research about boundary management online has focused on how people anticipate risks of disclosure and how they apply rules for boundary regulation (i.e., by investigating privacy policy of websites, by deleting past posts on blogs, or by using language that only some audiences can understand). Little research, however, has examined and tested comprehensive boundary management procedures proposed by CPM (i.e., boundary management by applying boundary ownership, boundary permeability, and boundary linkage rules). Further, individuals' boundary coordination

process in SNSs as information owner and co-owner has yet to be examined. In particular, this boundary coordination occurring in SNSs should be understood in combination with whether and how people are motivated to employ them, depending on the situation; i.e., how individuals may negotiate their boundary coordination rules considering competing concerns about privacy and connectivity in SNSs.

This project applies a perspective of technology affordances to understand this process. The use of privacy-related affordances, encompassing motives to regulate personal information flow, is likely to be associated with the extent to which people find them useful and helpful for privacy protection as information owner and co-owner. The following section will explore in more detail the concept of privacy affordances in general and in SNSs, along with how privacy affordances may be conceptualized according to their functions for ensuring privacy, connectivity, and information ownership in SNSs.

Conceptual Distinction of Privacy Affordance in SNSs

Thus far, the review has examined the concept of privacy and privacy management strategies that can differ between offline and SNS environments. Using CPM's theoretical framework, the review has explored motives and ways of privacy management, specifically about how SNS users may coordinate information boundaries after disclosures. According to CPM, potential disclosers may construct boundary access rules for regulating the permeability of information. After the disclosure, the original disclosers (i.e., information owners) and disclosure receivers (i.e., information co-owners) both tend to become responsible for managing information boundaries, often by negotiating rules about who else can have access to the shared information. In SNSs, compared to when individuals engage in the boundary coordination in offline settings, the

individuals may not be able to explicitly and verbally negotiate boundary coordination rules for a wide range of audiences. Instead, these individuals may often independently need to determine and apply boundary access rules through the use of privacy features.

As CPM proposes, privacy management practices can involve various procedures ranging from the assessment of rules for boundary accessibility, to employment of boundary coordination, to the management of boundary turbulence (Petronio, 2002). Many SNSs provide users with diverse privacy tools to individualize privacy management practices. Each privacy feature can afford different action possibilities for privacy management. Therefore, it will be important to understand how the users assess certain features and use them to carry out their goals. This section will discuss conceptualizations of privacy affordances in SNSs in terms of information ownership. Following this, it examines how the use of these features can be influenced by different motivations (i.e., privacy vs. connectivity).

Affordance of boundary coordination for self-generated information

boundaries. Regarding privacy management, some research has applied CPM to examine boundary management online. People have a tendency to control their visibility through various strategies including deleting and editing messages or contextualizing communicative environments for specific targets (Child et al., 2011; Johnson et al., 2012). SNS users may employ different privacy management strategies in different ways based on an understanding of functions of different privacy features as well as goals for using those features.

A few studies have conceptualized and operationalized boundary coordination rules (such as the information boundary ownership rule, information boundary

permeability rule, and information boundary linkage rule) as individuals establish rules to reveal personal information online. In a study examining health consumers' disclosure on e-health websites, Jin (2012) conceptualized the boundary coordination rules with the potential targets being health service providers. In this case, boundary linkage is "the connections that form boundary alliances between health consumers as disclosers and health service providers as recipients," boundary ownership is "the amount of responsibilities accruing to co-owners of private information revealed during e-health communication process," and boundary permeability is "how much information is able to pass through the boundary after consumers' private information disclosure to the e-health website" (pp. 70-71).

Child, Pearson, and Petronio (2009) developed measurements for boundary coordination rules pertaining to disclosures in blogs. These rules are built between blog posters and potential targets who may read the posts. For example, boundary permeability measures included items that indicate bloggers' concerns about whether others, such as family members, may come to read the post (e.g., I think my parents know about my blog; I would be upset if my friends shared what's written on my blog [reverse coded]). Boundary ownership items dealt with blog posters' perceptions of ownership and control over the posts (e.g., I am certain that all the information I reveal on my blog remains under my control). Boundary linkage items referred to whether blog posters are willing to create connections with blog visitors (e.g., People who know me personally also have access to my blog; when people post comments about my entries it makes me nervous to respond). These two studies show that potential disclosers may set their audiences and reflect on those audiences to establish boundary coordination rules. Notably, Child et al

observed that blog posters imagined particular audiences who may be considered critical in determining what to post on the blog and in helping the posters estimate potential risks when boundary turbulence occurs (CPM's boundary linkage rule).

The current project will partially incorporate the operationalization of both individuals' boundary permeability rule and collectively-held boundary coordination rules adopted by these previous studies to examine the ways people coordinate information boundaries in SNSs. First, prior to making self-disclosures, individuals may need to determine what information about self they reveal and to what extent. The process of pondering what information to share on SNSs is a way to regulate boundary permeability of an individual.

For information that people reveal on SNSs, people will need to generate boundary coordination rules to regulate the information. In regulating the information flow in SNSs, people may adjust the visibility of their self-disclosures for different targets through designating boundary ownership and linkage rules. First, to secure information ownership, people may erect information boundaries across diverse targets (i.e., exclusive disclosure lists in Facebook). CPM proposes that the boundary ownership rule indicates people's willingness to own and control information. With exclusive disclosure lists, SNS users can distinguish information ownership for different individuals, selectively observe, and reciprocate information with them. Monitoring individuals' own and their custom targets' information flow, these individuals can feel a sense of control over information.

Second, SNS users can adjust the size of exclusive disclosure lists as a way to regulate information permeability. As the size of the list increases, the likelihood that

information owned by this group may be accessible to others outside of this group will also increase. Therefore, restricting the size of an exclusive disclosure list to make it smaller can mean that people apply a stricter information ownership rule than when the size of a disclosure list is larger.

Lastly, as a way to regulate the linkage between people who have access to the shared information and others who do not have access to such information, individuals may also choose to block some audiences from access to one's own information. Excluding certain individuals can reduce concerns about social surveillance and help one engage in self-disclosures more proactively.

In addition to controlling one's own posts, s/he can monitor others' information that includes the users' identity or image when these others encourage boundary coordination through interactive features (i.e., social tagging). An opportunity of boundary coordination may be key affordance of SNSs for advancing associations with others whereas it potentially challenges the judgment about information ownership. Compared to taking control over one's own information, the information control on the co-owner's side (when someone else has disclosed information about you) may not be as flexible, in part because it can require an additional step to understand and negotiate boundary access rules of owners. However, taking a role as co-owner to censor and/or remove such information shared by others will be important to prevent privacy violation from unwanted exposure. The following section will describe options of privacy management as individuals become co-owners of others' information in SNSs.

Affordance of boundary coordination for other-generated information boundaries. Although privacy management in SNSs is mostly about regulating

information that one shares with others, another important practice can be how one manages information that others link one into. For example, in Facebook, when others tag a particular user to their photograph or post, it may be visible not only to those others' but also that user's friends. Being tagged may cause a privacy violation for that user if s/he fails to filter out what s/he may not want to share with friends on his/her timeline.

Another potential privacy violation may occur when one's friends write a post on his/her timeline where his/her friends can view the post. In consideration of these kinds of likely inadvertent privacy violations, users may need to determine if they want to allow others to tag or post messages or photographs on their timeline. If they do, they may further want to determine how to negotiate boundary access rules for certain posts uploaded by others.

This privacy management on the co-owner's side for the information that others share may need to be considered separately from the privacy management on the owner's side primarily in terms of the level of control that a co-owner has over an owner's information. First, as co-owner, untagging or deleting another's post may be considered an act that intrudes on information boundaries another user has already set. Although the co-owner may have some authority to co-ordinate the boundary with the owner, negotiating this boundary may not be as simple as that occurring offline. For example, individuals who are tagged in another's post may be concerned about untagging because untagging can implicitly convey their intentions to be disconnected with the other person on SNSs.

Trying to negotiate whether to delete the post or not can also be burdensome if many others are involved in the post as co-owners. Therefore, it is possible that those

who are tagged may leave the tagged post on their timeline in part because they may not feel they have the authority to make changes to the link, or they do not want to lose connections with others. In fact, a recent study shows that untagging or removing photographs is the function that SNS users were least likely to use (Pempek, Yermolayeva, & Calvert, 2009). By comparison, adjustment of one's own privacy settings was the feature users were most likely to use. This distinctive usage of privacy features from the owner's or co-owner's side may be driven by the difference in need to use the features: a user might be tagged or included in others' posts/timelines at a far lower frequency than one makes their own disclosures. SNSs may be primarily designed to promote individual users' information sharing, and features that help users construct linkage to others such as tagging may fulfill their supplemental goals to maintain networks.

However, even when considering the possibility that users may not encounter privacy violations often, understanding the ways that the users may employ privacy features to manage others' disclosures can be important. The extent to which certain privacy features are not used can indicate that users may not put significant values on privacy management using those features. A lack of use of certain privacy features can call attention to an aspect of the design of SNSs, which may underestimate the importance of boundary negotiation among users. The following section will discuss motivations for using privacy features in SNSs and how these motivations will influence the use of privacy features.

The Need for Connectivity and Privacy as Motivators of Privacy Management Practices

The previous section discussed how the pattern of managing privacy features may be differently conceptualized depending on whether users have more or less authority over coordinating boundaries. The different degrees of authority that the users have over boundary coordination, as information owners or co-owners, may influence the varied use of available features. More relevant to an affordance perspective, this use of privacy features can be better explicated by what may motivate SNS users to employ certain features more than other features. According to the premise of technology affordance, the goal of using features can differentiate the degree to which users may assess the usefulness of the technology and manage it to achieve their goal. By examining the use of certain privacy features in SNSs based on motivations for securing privacy, the current study will better clarify if some users may balance various privacy management strategies appropriately.

Reflecting on the argument of Altman (1975) and Petronio (2002) about the process of maintaining dialectic tensions, the current project argues that the need for privacy may be an overarching motive to use features for privacy protection. In addition to the need for privacy, I propose that the need for connectivity will be another motivation influencing the employment and management of privacy features. From a theoretical standpoint of privacy, the need for connectivity may refer to an opposing force relative to the desire for privacy. It also refers to the individual tendency to form and maintain social relations (Baumeister & Leary, 1995), thus, it can help assess how users may customize privacy features to balance privacy and openness in SNSs. More

specifically, the need for connectivity may explain how people manage privacy features not only to reach out to diverse audiences but also to create room for others to approach them (e.g., Wise, Alhabash, & Park, 2010). Sharing ownership of information as co-owner through features that promote relational linkage with others (e.g., tagging) may be a simple but effective strategy to expand connections. Becoming an information co-owner in SNSs, however, may require one to apply less rigorous privacy management tactics than when s/he is owner, as a person increases his/her availability to multiple networks, not just one's own.

In short, the need for connectivity can explain individuals' direct and active motivations to connect to others but also the motivation to reserve room for others to reach out to those individuals. Therefore, it is not yet clear how the privacy desire, which reflects individuals' motivations to protect their own boundaries, is associated with the desire for connectivity. In other words, will the desire for connectivity function in the opposite direction to the desire for privacy in influencing the use of privacy features? Therefore, a research question is proposed on the relationship between the need for privacy and the need for connectivity.

RQ1a: What is the relationship between need for privacy and need for connectivity on SNSs?

The varying ways that SNS users regulate boundaries will need careful examination in consideration of their roles and how motivations for privacy and connectivity may influence the ways that they engage in these roles. The review will next discuss how the disposition to privacy may influence the use of privacy features to coordinate boundaries for self as information owner and for others as information co-

owner. Then, it will examine the ways that the need for connectivity may be associated with the use of these privacy features.

Need for Privacy and Use of Privacy Affordances

As postulated by Altman (1975) and Petronio (2002), the desire for privacy is intrinsic; that is, it is part of human nature to simultaneously maintain openness and closure. According to an evolutionary perspective, Halmos (1953) articulated the importance of solitude, because it can balance social activities for more harmonious living. Other researchers proposed that the disposition to solitude or autonomy can vary as people go through developmental stages (Lawton & Bader, 1970). The developmental view of privacy management emphasizes that people learn how to negotiate privacy boundaries through various social and educational environments. For example, Petronio (2002) proposed that one may learn how to negotiate privacy boundaries based on how his/her family teaches him/her to do so. On a more fundamental level, Petronio argued that people deal with increasingly complicated boundary access rules as they grow older because they possess more varied kinds of information with age. In short, the disposition to privacy may be constructed through social and educational processes, helping one form particular strategies for boundary management (Yao, Rice, & Wallis, 2012). The following section will discuss how the need for privacy influences the use of privacy features for coordinating one's information boundaries as information owner.

Need for privacy and coordinating boundaries as information owner. People regulate privacy through active interactions with many others in SNSs. boyd (2011) argued that individuals' privacy state is shaped in the relationship among information, technology, and time. For example, individuals need to understand the tension between information about self and individuals themselves because the information posted on

SNSs may not fully or accurately represent self. More specifically, the technology tends to make individuals' privacy state more salient by restricting individuals' freedom of negotiating meanings of disclosure with their audiences. The saliency of one's position, especially from the perspective of those being watched, can provoke concerns about surveillance (Solove, 2007).

In SNSs, concerns about surveillance or social control may influence users' perception of privacy risks, leading them to generate efforts to regulate disclosures across these audiences. Petronio (2002) argued that individuals want control over information through the rule of permeability in a way that the individuals choose to what extent they reveal about self. Making one's information boundaries permeable means that people are willing to open up about self broadly to others. People may also choose not to disclose much about self, thus keeping their information boundary solid. In SNSs, people may regulate the permeability of information boundaries by being selective on what to post on SNSs. Further, when people have a higher need for privacy, the more likely that they will create a stronger boundary around information and become selective in revealing. This leads to an initial prediction:

H1a: The need for privacy on SNSs positively predicts controlling posts on SNSs.

In controlling information, in addition to controlling what to post on SNSs, people can apply boundary access rules to selectively share the information ownership with different others. For example, people may employ privacy features primarily to limit or inhibit information sharing with certain individuals. Thus, the use of privacy features in SNSs can demonstrate how strictly people wish to control information flow.

Monitoring and segmenting information flow by use of exclusive disclosure lists can help reduce risks from inappropriate disclosures to a wrong target. Child and Petronio (2009) argue that people who post online can control information flow by selectively granting ownership to others. In SNSs, providing ownership of information may occur in the form of selective sharing through the use of privacy affordances. For example, Facebook users can use exclusive disclosure lists (in Facebook, generally called customized friend list) to include certain individuals as self-disclosure targets. Further, these users can block individuals, preventing them from seeing any of these users' posts and from inviting the users to any shared activities (e.g., friending request, tagging, or inviting to events). Thus, the following is proposed:

H1b: The need for privacy on SNSs positively predicts the creation of exclusive disclosure lists.

H1c: The need for privacy on SNSs positively predicts blocking of certain audiences from disclosure.

According to Petronio (2002), in addition to managing rules of boundary permeability (i.e, controlling posts on SNSs in this current research) and boundary ownership (i.e., selectively revealing to exclusive disclosure lists or blocking certain friends), people develop boundary linkage rule to determine who else, in addition to targeted audiences, may be allowed to get access of their information. Explicitly creating boundaries to exclude selected individuals through the use of privacy features may reveal that one wants to secure boundaries against unwanted audiences. As a result, this research proposes that the need for privacy will positively influence the management of privacy

features, such as exclusive custom lists and restricted/blocking lists. This suggests another related prediction:

H1d: The need for privacy on SNSs positively influences the creation of restricted lists and the size of restricted audiences (i.e., restricted friends on Facebook).

The next section will discuss how the need for privacy may influence the use of privacy features for coordinating information boundaries that others create.

Need for privacy and coordinating boundaries as information co-owner. In SNSs, the privacy management process involves one's control over information that s/he shares and information that s/he is involved as co-owner. For the latter, users may untag posts that others have uploaded or delete what others share on one's own space (e.g., timeline on Facebook). Monitoring what others tag one into or post on one's timeline may be related to an effort to avoid boundary turbulence. Research has shown that bloggers may delete posts after finding the inappropriateness of content for making positive impressions (Child et al., 2011). Similarly, individuals may revise information boundaries by untagging or removing photographs that may harm these individuals' reputation (Madden & Smith, 2010). The activities to restrict access to one's information boundaries may be related to his/her desire for privacy specifically towards his/ her audiences. Therefore, those who feel a greater need for privacy may be more likely to engage in the control of others' information by monitoring tagging or breaking boundaries that others generate (i.e., by untagging or deleting) as co-owners than those who are less concerned about privacy protection. This leads to a pair of predictions:

H2a: The need for privacy on SNSs positively influences monitoring tagging.

H2b: The need for privacy on SNSs positively influences breaking other-generated information boundaries.

As much as the need for privacy influences the application of strict rules for boundary coordination, the need for connectivity can help explain one's willingness to loosen boundaries. The following section will discuss how the need for connectivity influences the use of privacy features.

Need for Connectivity and Use of Privacy Affordances

As stated, the need for privacy can promote engagement in privacy management practices in a way that people who have greater disposition to privacy may apply more rigorous rules for boundary management. The need for connectivity, like the openness dimension at the opposite side of the privacy continuum, can influence how willing individuals are to loosen boundaries to form relationships with others. The next section will discuss how the need for connectivity may influence the use of privacy features for coordinating information boundaries as information owner.

Need for connectivity and coordinating boundaries as information owner.

The concept of connectivity refers to a linkage that a person has with others to form relationship. Baumeister and Leary's (1995) "need to belong" may be similar to the notion of connectivity tendency because they stated that people possess an innate drive to form sustainable and affective relationships with others. Maintaining social bonds is critical for survival because individuals within groups can cooperate to earn resources and to compete with other groups to secure limited resources (e.g., Ainsworth, 1989; Moreland, 1987).

In SNSs, users have privilege to search, invite, and friend with others to exchange information and emotional resources. As boyd (2007) emphasized, a critical goal of using

SNSs is to establish, maintain, and expand relationships with others. Researchers have argued that using SNSs may contribute to forming resources from both strong and weak ties as an individual has a cost-effective way to interact with many individuals compared to offline contexts (Burke, et al., 2010; Vitak, Ellison, & Stenfield, 2011). Among others, sharing information about self on SNSs may be an important means to connect to others and to receive needed support. Therefore, people who have higher rather than lower levels of need for connectivity will be more likely to open up about self. That is, the greater the need for connectivity on SNSs, the more likely people will maintain higher information permeability on SNSs. This suggests the following:

H3a: The need for connectivity on SNSs negatively predicts controlling posts on SNSs.

In order to establish diverse networks, one may need to regulate the degree of disclosures with different others (e.g., Ellison et al., 2011). Thus, how SNS users accommodate the interactions, adjusting the degree of disclosures with diverse others, can demonstrate how interested they are in building connections.

In the previous section, it was argued that SNS users may create custom lists to manage distinctive boundaries to exclude certain individuals from targeted audiences. This customization process may be primarily explained by motivations to assure privacy because drawing boundaries may signify the desire for closure from unwanted others. On the other hand, users may possess customized audience categories for the goal of sharing information as well (i.e., inclusive customized friend lists). For instance, users may divide their audiences into different subgroups according to closeness, shared interests, or locations to customize interactions with various groups more actively. Thus, as a way to

build connections to others on SNSs, users can employ features of SNSs to diversely contextualize communication environments. Because people who seek connections with diverse others may engage in the management of inclusive customized friend lists, the need for connectivity will be associated with the management of inclusive customized friend lists. This leads to the following prediction:

H3b: The need for connectivity on SNSs positively predicts the creation of exclusive disclosure lists.

Because the need for connectivity may be more related to the expansion rather than the restriction of interactions with others, users who feel the need for connectivity will be less likely to exclude audiences when sharing information than those who feel less need for connectivity. This suggests an additional set of hypotheses:

H3c: The need for connectivity on SNSs negatively predicts blocking of certain audiences from disclosure.

H3d: The need for connectivity on SNSs negatively predicts the creation of restricted lists and the size of restricted audiences (i.e., restricted friends on Facebook).

The next section will discuss how the need for connectivity may influence the use of privacy features for coordinating information boundaries that others create.

Need for connectivity and coordinating boundaries as information co-owner.

In SNSs, sharing personal information as information owner or co-owner is an important means to develop relationships. When it comes to the influence of information sharing on relational development, allowing boundary coordination of others' disclosures is significant, because being a disclosure recipient (i.e., information co-owner) can mean that one is being trusted and liked by them (see Altman & Taylor, 1973). It is also a way

to present self to others by indirectly presenting some connections. For example, when someone in an individual's network tags him/her in their posts, this act indirectly reveals that connection to audiences within that tagged individual's own networks. According to prior research, people consider posts that others create (rather than posts created by the individual in the post) to be more trustworthy for the purposes of making assessments of that person (Walther et al., 2009). In summary, leaving room for others to take some authority in tagging or making posts on one's timeline can diversify his/her spectrums of impression formations. Thus, users who have a greater need for connectivity can have less motivation to exercise control over others' information than those who feel less need for connectivity. This leads to two additional predictions:

H4a: The need for connectivity negatively predicts monitoring tagging.

H4b: The need for connectivity negatively predicts breaking other-generated information boundaries.

As the hypothesized relationships from H1-H4 show, there may be a direct positive relationship between the need for privacy and the coordination of information boundaries in SNSs. On the other hand, a negative relationship was proposed for the relationship between need for connectivity and the coordination of information boundaries in SNSs. Because the need for privacy and the need for connectivity might function in opposite directions to one another as per RQ1a, the relationship between both privacy and connectivity desires and the coordination of information boundaries is unclear. Therefore, additional RQs are proposed as follows:

RQ1b: What is the relationship between the need for privacy on SNSs and coordination of information boundaries for people with higher and lower needs for connectivity on SNSs?

RQ1c: What is the relationship between the need for connectivity on SNSs and coordination of information boundaries for people with higher and lower needs for privacy on SNSs?

In addition to examining the direct relationship between control of others' information, and both need for privacy and need for connectivity, this project aims to test if this relationship may be moderated by individuals' perceived co-ownership of others' information. In other words, this relationship between the need for privacy and control of others' information may differ depending on if one feels more or less need to exercise control over others' information boundaries. The following section discusses the rationale underlying the relationships between both the need for privacy and need for connectivity, and control over others' information boundaries.

Perceived co-ownership as moderator in the relationship between need for privacy/connectivity and control over others' information. Information co-ownership is established when an individual who originally reveals the information determines rules of how to manage the shared information boundary with the information recipient. Thus, CPM describes that information co-ownership requires the information co-owner to coordinate and negotiate rules for boundary coordination. Although CPM implies a mutual agreement on boundary coordination rules between the people who reveal information and the information recipient, having such reciprocal agreement may not be possible in SNSs. For example, when people on SNSs view another's post, these people

should not be responsible for protecting the information in the post unless there are explicit requests of the message poster to do so.

In SNSs, the information co-ownership can occur with some implicit or explicit signs to co-own the information. For instance, when an individual shares a piece of information with a specific group, the information co-ownership may belong to the group. People may also become co-owners of the information when others create information boundaries between these others and the people, for example, by social tagging or posting on the people's timelines. These two parties share the information ownership (Petronio, 2002). However, the latter party's perceived authority to make changes to the information boundary may not be as great as that of the information owner (i.e., the original poster). From a different standpoint, information that others share about self may be less controllable in terms of the timing to request the deletion of the post or to untag than information that one posts on SNSs.

This lack of control over boundary coordination both as information co-owner and for the timing to negotiate boundaries may influence how people assess the importance of their privacy pertaining to the information. For example, people were more likely to put higher value on information that they had not yet shared than on information that they already shared (Acquisti et al., 2012). Putting a higher value on the information that people have not yet shared may occur partially because they may assess costs of losing privacy greater when they already have authority to control it. For the information that already has been revealed (compared to information that s/he possesses) s/he may not assess the value of privacy as highly because this information is not any more under one's possession. Given that the valuation of privacy may in part depend on situations

where individuals may not have complete control over information, the study proposes that the willingness to coordinate others' information boundaries may be a function of the disposition to co-ownership of information on SNSs. Therefore, perceived co-ownership of others' information about self may function as a moderator for the relationship between the need for privacy and control of others' information, suggesting the following:

H5a: The positive relationship between the need for privacy on SNSs and the coordination of other-generated information boundaries will be stronger when the degree of perceived information co-ownership is greater.

For the same reason just proposed, the relationship between the need for connectivity and control of others' information may differ depending on whether one, as co-owner, is more or less likely to exercise control over others' information boundaries. As co-owner, the more one perceives a greater co-ownership of others' information about self, the more likely it is that the negative relationship between the need for connectivity and control of others' information will weaken. This leads to the following hypothesis:

H5b: The negative relationship between the need for connectivity on SNSs and the coordination of other-generated information boundaries is expected to be weaker when the degree of perceived information co-ownership is greater.

As far as the affordance of privacy is concerned, privacy features of SNSs may grant users the flexibility to regulate the level of exposure. Through the application of privacy features, individuals may gain a sense of control over information, which in turn is likely to influence their information sharing activities. Prior research shows that perceived control over the publication of information encouraged the revelation of more

personal information than when the perceived control was lesser (Brandimarte, Acquisti, & Loewenstein, 2012). Verifying the relationships among the use of privacy features, the sense of control, and disclosure activities, as will be discussed in the next section, may be key to understand the functionality of privacy features (in other words, if the appropriation of the features helps one achieve expected perceptual and actual disclosure outcomes).

The following section will delve into how the use of different privacy features influences individuals' disclosure activities. Specifically, the ways that the use of these privacy features influence disclosures will be examined partially as a function of perceptions about information control (i.e., sense of control and perceived risks of privacy violation). These different perceptions about information control will emerge because of the different functions of privacy features.

Disclosure Patterns as a Function of Privacy Affordances

In order to manage privacy, individuals may develop and apply boundary access rules to determine the level of disclosure (Petronio, 2002). Once disclosure occurs, they apply rules to manage collectively-held boundaries. In SNSs, as thus far discussed, privacy features serve as tools to customize boundary management practices. Having an ability to contextualize communicative environments may reflect individuals' willingness to differentiate the level of disclosures to different others. Prior research has proposed that these disclosure outcomes may be a direct function of boundary coordination efforts in SNSs (Stutzman et al., 2012). That is, people who apply preventive strategies to coordinate information boundaries will share more intimate information than others who do not apply such strategies. These results may affirm the assumption underlying the linear relationship between the effort to secure privacy (i.e., through boundary coordination) and the engagement in more intimate disclosures. However, proving this

relationship may not provide a logical explanation underlying the disclosure behaviors via use of privacy features from the perspective of technology affordance. That is, will privacy features afford individuals some sense of control to make appropriate disclosure decisions?

The project proposes that the use of privacy features may be a driver of disclosure behaviors such as disclosure frequency, breadth, and depth. This association between the use of privacy features and disclosure behaviors may become strengthened by perceptions of information control. The following section discusses how contextualizing individuals' communicative environments using privacy features can influence their disclosure activities including disclosure frequency, breadth, and depth.

Disclosure patterns on SNSs influenced by the use of privacy features to coordinate one's information boundaries. In terms of how individuals control information, I argued that SNSs' privacy features take a role in regulating boundaries to contextualize disclosure for particular targets. Individuals may also adjust the information boundaries that others share by means of deletion or untagging. By regulating the level of visibility, individuals may reduce concerns that emerge from circumstances under which their information is open to the public, through managing privacy features. Possessing some level of capabilities to control information may be related to the ways that individuals share information about self. As discussed previously, people who could control the publication of their information were more likely to reveal intimate information than others who had less control over the information (Stutzman et al., 2012).

In mediated communication environments, the perception of information control may be diversely defined depending on whether the context allows for flexible

information regulation. For example, Walther (1996) applied his hyperpersonal model to examine how online communication contexts under which individuals have flexibility to present self are related to their disclosure frequency, breadth, and intimacy. Specifically, he found that individuals tended to share more intimate information when their identity was not revealed to another; thus, the risks of privacy violation were lower than when their identity was revealed.

People may also reduce disclosure risks but increase actual information control by actively managing sociotechnical affordance (see Bazarova, 2012). Bazarova (2012) emphasized SNSs' unique features that enable users to customize communicative contexts to be more or less public for different target audiences. Customizing contexts for disclosures by using privacy features can increase feelings of or actual information control. This sense of control for information then may be associated with the intent to disclose more. For example, research has shown that those who have taken a step to draw boundaries between the public and friends have disclosed more broadly and intimately (Stutzman et al., 2012). Other research shows that SNS users who customize disclosure contexts to selectively share their information with certain individuals tend to reveal information more broadly than others who do not contextualize communicative environments (Stutzman, Capra, & Thompson, 2011).

In this project, the degree of disclosures predicted by the use of privacy features will be categorized into frequency, breadth, and depth. The frequency of disclosure indicates the amount of information revealed, the breadth of disclosure is the range of information shared, and the depth of disclosure is the intimacy of information (Altman & Taylor, 1973). Early disclosure research measured disclosures using these three

dimensions while individuals develop relationships with others over time. According to Altman and Taylor (1973), self-disclosure is a key booster of relationship development as individuals progressively reciprocate information about self with others. Individuals tend to start sharing from general and superficial information about self when initiating a relationship. The frequency and breadth of information shared in the initial relational stage play an important role in increasing liking by one another. As relationships grow, individuals share more in-depth information about self, although the frequency and breadth of disclosures may decrease.

Walther (1996) examined the patterns of disclosures using these dimensions in dyadic online interactions, finding that the frequency, breadth, and depth of information increased as individuals felt less constraint in the presence of others. In this dyadic online context, more disclosures were enabled because individuals had flexibility in presenting self in a positive light, without concerns about being negatively judged because of reduced visibility of negative aspects about self. This flexibility in self-presentation could have provided individuals some sense of confidence when interacting with their study partner.

In SNSs, users generally identify self, having less flexibility to consistently present self in a fashion that they desire. Instead, these users may regulate the degree of exposure by choosing not to share, selectively choosing topics for audiences in general, or contextualizing disclosure contexts for specific audiences using privacy features. These efforts to regulate information will predict the ways that individuals engage in disclosure activities.

This project applies CPM's boundary permeability rule and boundary coordination rules (i.e., ownership and linkage) to conceptualize individuals' information boundary management for information that they create. The pursuance of each boundary management rule may be operationalized differently in terms of how individuals accommodate features (e.g., controlling posts, designating labels for diverse audiences, adjusting the size of audiences, and restricting the linkage of information to certain individuals). However, the general goal for managing information boundaries by applying these rules may be to share information with others more broadly and intimately (Stutzman et al., 2011). This suggests the following:

H6a: The use of privacy boundary management rules for self-generated information boundaries positively predicts the frequency, breadth, and depth of disclosure.

An important premise of technology affordance is the flexibility that individuals have to adjust the usage of a technological object based on their goals. When it comes to privacy management, the use of privacy features will assure individuals control over information. Achieving this sense of control may be an important process underlying disclosure decisions on SNSs. The following section describes the mechanism under which the use of privacy features influences disclosure activities as a function of sense of control.

The sense of control as mediator for the relationship between the use of privacy features for one's information boundaries and disclosure outcomes. As the definition of SNSs suggests, the interactive nature of personal information sharing in SNSs is key to forming relationships. At the same time, it highlights the need among

users to regulate what to reveal and to whom. SNS users may have choices over their level of exposure through customizing lists of specific individuals for selective disclosures. They can also negotiate information boundaries that they and others construct through deleting or untagging posts. Marathe and Sundar (2011) suggested that “customization is a means to an end but it is not designed to be an end itself” (p. 781). Instead, this customization of technology features is considered a secondary activity because users modify interfaces and devices to fit their goals. Through customization, users can predict outcomes, initiate actions, and apply many options in their interactions with the interface.

The affordance of many technological objects can reward users with goal-directed outcomes. The privacy management on the part of the information owner may grant individuals control over information boundaries in advance of making disclosures. Where the boundary coordination is concerned in SNSs, the extent that people apply strict rules to affirm information ownership, permeability, and linkage will be associated with how comfortable and exclusive they feel when engaging in communications in SNSs. These affordances that let users have authority and flexibility over performing various actions can give them a sense of agency and control (Sundar & Marathe, 2010). For example, Sundar and Marathe (2010) conducted a study that compared the degree to which users feel a sense of control through customizing news feeds for themselves. They found that power users, who were capable of exploring and utilizing technological features for aggregating news, felt a greater sense of control than others who chose to be served with news generated by the system.

The sense of control that one perceives through customization may be driven by the degree that one feels the authority to choose and manage features particularly to meet their goals. When it comes to the employment of privacy features, the sense of control that users may have through customizing these features may be parallel to their confidence in understanding the mechanism of these features. For instance, the users who know how to create custom categories will know better who will likely be their information receivers (and who will not). Those who monitor tagging or untag posts that others link them into will be more confident about managing access of those posts to specific individuals. Finally, as users adjust the size of customized friend lists for the goal of excluding certain individuals from disclosure targets, they will feel better assured of the solidity of information boundaries between wanted and unwanted targets. In short, that one may apply individual criteria to map out audiences or to adjust linkage to information boundaries will lead them to believe that they can control information. Thus, the following hypothesis is proposed:

H6b: The relationship between the use of privacy boundary management rules for self-generated information boundaries and disclosure outcomes will be mediated by the sense of control.

The relationship between the application of privacy features and beliefs about a sense of control may emerge based on the assumption that privacy features afford one the flexibility to manage boundaries according to one's own needs. Indeed, research has shown that individuals may apply diverse combinations of boundary coordination strategies to regulate others' access to information (e.g., Besmer & Lipford, 2010; Child et al., 2011; Johnson et al., 2012).

The current project largely divides the features into those that may be used to exercise control over others' boundaries versus one's own information boundaries. The rationale behind this distinction is that whether users perceive themselves as information owner or co-owner can affect how they perceive the features' functionality, specifically based on the competing motives between the need for privacy and connectivity. For example, concerns about connectivity may complicate choices of features for coordinating others' boundaries in part because being disconnected from others through trying to negotiate information boundaries may be against norms of promoting diverse networks in SNSs. On the other hand, people can solidify information boundaries—thus, affirming better privacy management by disconnecting the information linkage from others. The choice of whether to use features to control others' versus one's own boundaries, however, can differ in nature in their functions for influencing disclosure activities. The following section will discuss the function of features for controlling others' information and how the use of such features influences influence disclosure activities.

Disclosure patterns on SNSs influenced by the use of privacy features to coordinate others' information boundaries. In arguing the functionality of a certain privacy feature, a component that may contribute to shaping users' assessment of the feature may be if using it is likely to help them experience expected outcomes. For example, consider when one feels a need to delete a post that others updated on his/her SNSs. This boundary management process that adjusts the connection with others may require one's effort to balance tensions between granting and restricting access of his/her information across network. On one hand, having flexibility to devise strategies to

regulate one's information boundaries may increase perceived capabilities to control information. On the other hand, trying to alter others' information boundaries may be a way to react to the turbulence (e.g., untagging) or to further avoid turbulence caused by others (e.g., monitoring tagging).

These activities such as revising boundaries from turbulence may facilitate concerns about managing privacy in the future rather than reduce those concerns currently. For example, individuals who delete photographs that others link them into may do so because the photo does not seem to be appropriate to share with audiences within these individuals' networks. When the individuals face this boundary turbulence, they may find deficiencies in their existing privacy management practices and may become uncertain about the probability of experiencing additional turbulence (e.g., Child et al., 2011).

Experiencing boundary turbulence and adjusting information boundaries as a result of the turbulence may lead to regret from posting information on SNSs (Child et al., 2011). This experience of turbulence, then, may engender concerns about regenerating boundary access rules to avoid further privacy violation. For example, feeling uncertain about who may have access to one's information may increase individuals' concerns about their capabilities to control information (Brandimarte et al., 2012). The loss of control is likely to increase perceived risks of privacy, which may negatively influence individuals' willingness to engage in disclosure activities on SNSs (Lo, 2010). In contrast to the function of the sense of control in promoting disclosures, the perception of privacy risks caused due to the experience of turbulence can discourage intentions of disclosing. Thus, the project proposes the following hypothesis about the

association between the use of privacy features for coordinating others' information boundaries and disclosure outcomes, due to the nature of boundary coordination activities that may deepen concerns about privacy and uncertainty about future disclosure behaviors:

H7a: The use of privacy boundary management rules for other-generated information boundaries negatively predicts the frequency, breadth, and depth of disclosure.

Perceived privacy risks as mediator of the relationship between the use of privacy features for others' information boundaries and disclosure outcomes. As discussed earlier, individuals use some privacy features with the goal to revise or change boundary access rules when boundary turbulence occurs. Making changes to boundaries, especially those that others create, however, may provoke concerns about negotiating additional boundary access rules. Realizing the turbulence may also incur concerns about how to further regulate one's information boundaries.

Recent research has shown that individuals feel discomfort when experiencing boundary turbulence due to posts generated by others, specifically because these individuals have relatively less control over managing such posts in a timely manner (Litt & Hargittai, 2014). Furthermore, this discomfort increases when individuals remove the problematic posts, because the removal of someone else's post is not considered a normative action in SNSs and so drives others' attention to the reasons for deleting them. In short, recognizing the need to come up with new boundary management strategies and enacting these strategies may exert a chilling effect (see Afifi & Olson, 2005) on one's perception about privacy and boundary management. Relying on a similar rationale

proposed for the relationship between the sense of control and disclosure outcomes, the project hypothesizes that perceived privacy risks may emerge as a result of changing boundary access rules, followed by disclosure behaviors:

H7b: The relationship between the use of privacy boundary management rules for other-generated information boundaries and disclosure outcomes will be mediated by perceived risks of privacy violation.

In sum, although some privacy features may induce feelings of control over information, other features can possibly raise concerns about privacy in part because the use of those features make individuals revisit risks of privacy violation. Figures 1-3 show hypothesized relationships among variables in the theoretical model. The following chapter will describe methods to conduct the current research.

Figure 1. *Theoretical Model and Hypotheses (H1 & H2)*

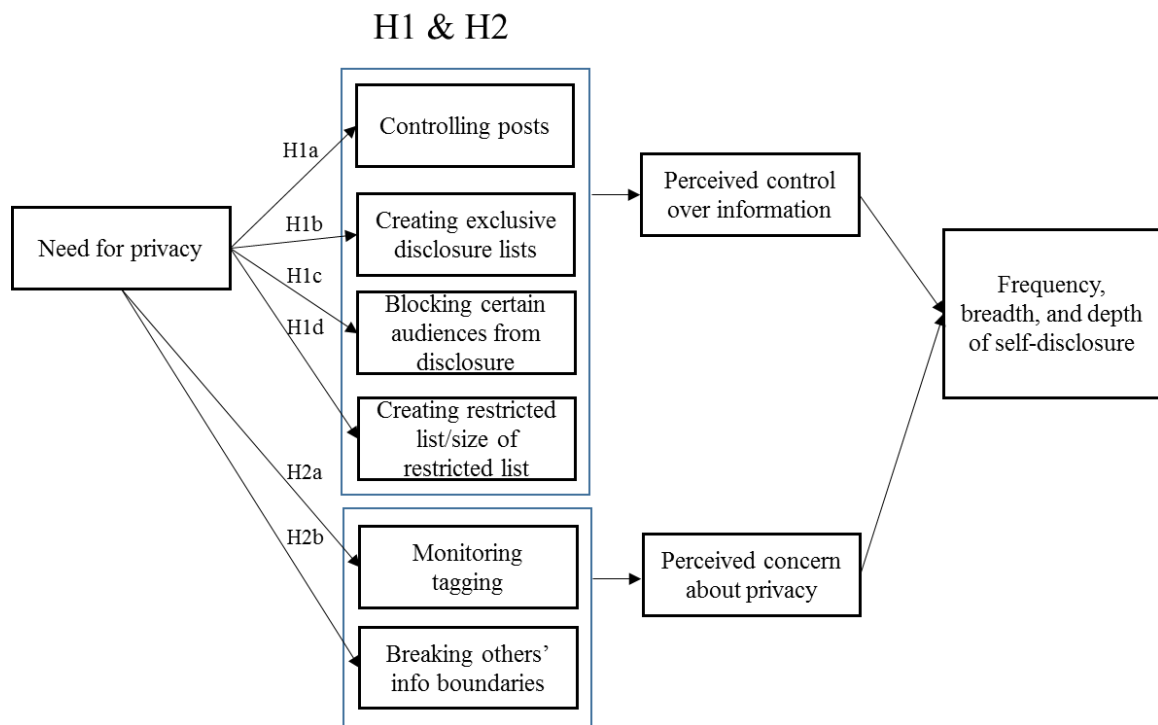


Figure 2. *Theoretical Model and Hypotheses (H3&H4)*

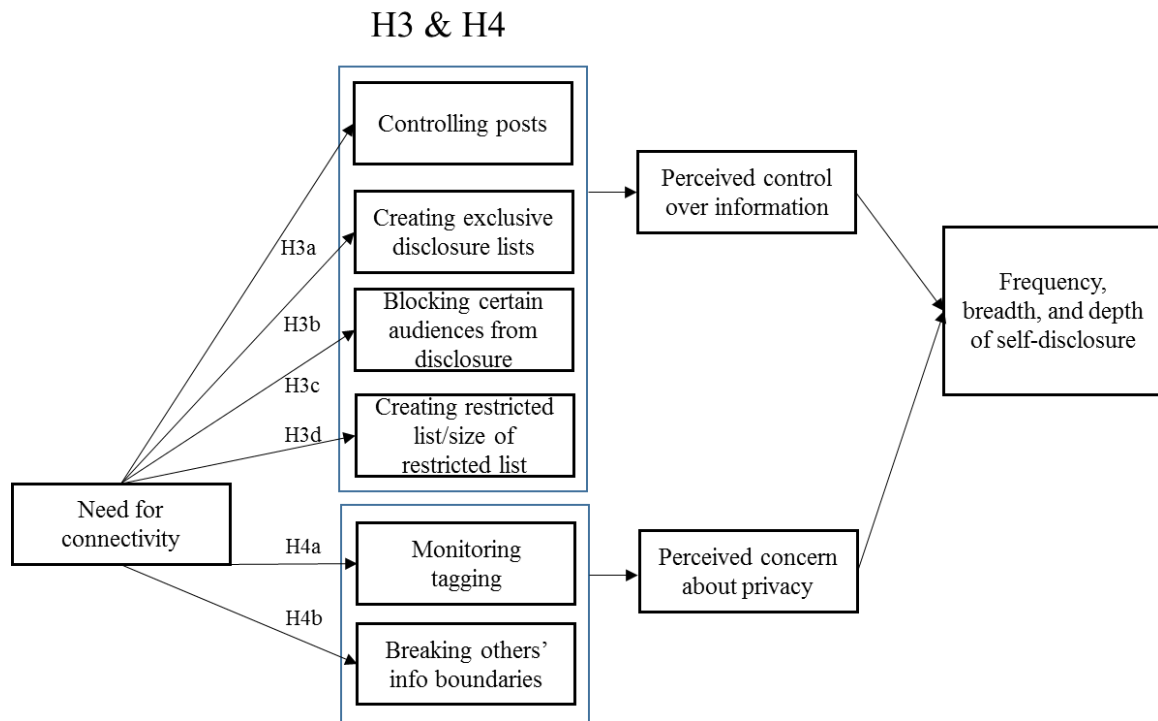
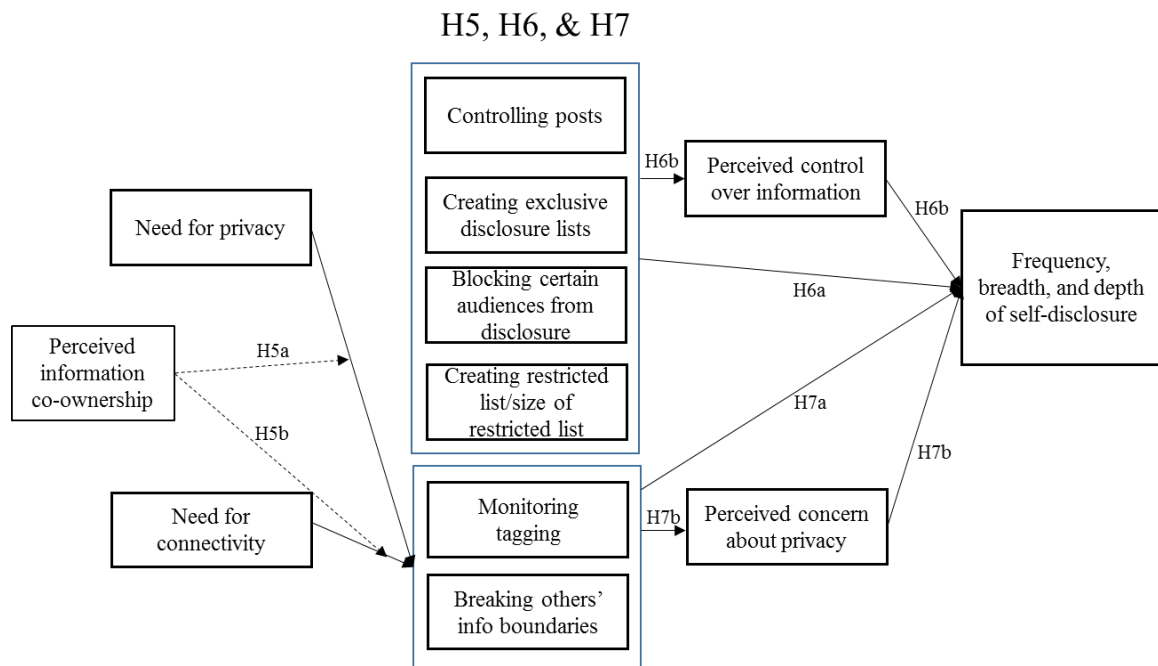


Figure 3. *Theoretical Model and Hypotheses (H3&H4)*



Chapter 3: Methods

This study examined the ways in which SNS users employ privacy features to manage personal information flow in SNSs, how the use of these features leads to a perceived sense of control and privacy concerns, and how all that relates to frequency, breadth, and depth of self-disclosure. The study not only collected self-report data about SNS users' information boundary management strategies and perceived disclosure outcomes but also collected behavioral measures of information boundary management and communication outcomes by capturing actual message posts on SNSs (for this study, Facebook). Facebook is the most popularly used SNSs among other social network sites (Pew, 2013). Further, it affords the flexibility of privacy protection such that users may choose to customize to manage information boundaries that self and others generate. In terms of user population diversity and the fit of the context to the project goal that examines how the management of self and other-generated information boundaries influence self-disclosures, Facebook is a suitable SNS platform to conduct this research.

Data Collection

This section will describe processes of data collection including participants sampling and survey procedure.

Sampling. Given the goal of the project to examine how the use of privacy features such as Facebook friend lists and Facebook groups influences individuals' self-disclosure patterns, the study used both college students enrolled in several classes at a large northeastern U.S. university and others in those students' networks to reach Facebook users who meet the research criteria. First, the researcher contacted instructors of several classes to recruit participants in exchange for a small amount of extra credit for research participation. Second, students of chosen classes were asked to invite one or two

participants to this study. The invited participants should be (a) active Facebook users, (b) have at least one friend list or Facebook group, and (c) should have used the friend list or the Facebook group to make posts in the past 6 months. If any student meets these criteria, s/he was allowed to participate. The participation criteria were described in a flyer that was available through course websites. Eligible participants were able to access the link to the survey through the course website or were provided with a link to the survey by student recruiters.

In addition to recruiting participants who use Facebook friend lists or Facebook groups, I also recruited Facebook users regardless of whether they use these features when making posts. This additional recruitment of participants was considered based on the possibility that many Facebook users may make self-disclosures that are open to all Facebook friends without using those features and that their self-disclosures patterns can be compared to those who make self-disclosures using friend lists or other key features. In sum, by including Facebook users who make self-disclosures without using any privacy features, the study aimed to better examine the role of privacy features in enhancing perceived sense of control, which then may lead to more frequent, broad, and in-depth self-disclosures. To recruit general Facebook users, I used a convenience sample of college students in the same university. Instructors of several classes posted a flyer that announced the research participation and criteria (i.e., participants should be an active Facebook user). Students were able to access the survey link through their course websites and participants received a small amount of extra credit in exchange for their participation.

Survey procedure. After clicking on the online survey link, participants were asked to read an informed consent form, which explained how the application (Facebook API) would retrieve information about participants' use of privacy features on Facebook. For example, the participants were informed what information would be retrieved (e.g., names of friend lists, a few posts they made on the status update) and that no one can match their identity with any of the retrieved information.

After providing consent, participants were redirected to a screen to participate in the first part of the survey. In the next part of the survey, participants were asked to respond to questions about posts (i.e., Facebook status update) that they actually shared with others on Facebook. Facebook API was used to retrieve data, including the number of friends in Facebook and posts on Facebook to various target categories. For the purpose of this project, the six most recent posts that include more than three words were retrieved in order to avoid messages for greetings or congratulations (see Bazarova et al., 2015). The posts were collected based on their availability from the following categories; status updates to (a) all friends, (b) all friends excluding any friends, (c) all friends excluding any friend lists, (d) friend lists, and (e) Facebook groups. For each retrieved post, participants responded to measures such as their assessment of intimacy of the post, appropriateness of sharing the message with the relevant target, and the perceived sense of belonging by sharing the message. After finishing the survey, participants received a unique code that proved the completion of survey and that assigned extra credit for participation.

Participants

Participants included 412 Facebook users. Among these, 267 (64.8%) were female and 133 (32.3%) were male (2.9% did not report gender). Participants ranged

from 18 to 52 years old ($M = 20.66$, $SD = 3.61$). Just over two-fifths of the participants ($n=172$, 41.7%) were Non-Hispanic White, and the others included Asian (15.5%), Asian Americans (14.6%), Hispanic (9.2%), Non-Hispanic Black (4.9%), Bi-Multiracial (4.1%), and others or unidentified ethnicity (10.0%). Out of all participants, 52.4% ($n = 216$) posted at least once on Facebook within six months prior to their study participation. In order to determine any differences in the characteristics of participants who made and who did not make any post, means and characteristics of variables that can influence Facebook posting (i.e., needs for privacy and connectivity, Facebook intensity, and demographics) were compared between those having and those not having posts. Results show that there were not any statistically significant differences in the levels of the needs for privacy, need for connectivity, and age between participants who made and who did not make any posts. There were statically significant differences in Facebook intensity, gender composition, and ethnicity between these groups. Therefore, these variables were controlled when all participants are included in the analyses to test hypotheses.¹

Measures

This section is organized to follow the flow of the theoretical model.

Measures for motivations for using privacy features. Measures include the need for privacy and the need for connectivity on SNSs (for this study, Facebook).

Need for privacy on SNSs. The need for privacy on SNSs was measured by four 7-point Likert-type items adapted from Yao et al. (2007) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability in this study was acceptable ($\alpha = .77$;

¹ For hypotheses that do not include actual measures of self-disclosures (H 1-5) but that examine the association between needs for privacy and connectivity, and the coordination of self and other-generated information boundaries, all participants ($N=412$) were included in analyses.

$M = 5.10$, $SD = 1.08$). Sample items include, “I’d rather not talk about myself on Facebook,” and “I prefer others know little about me on Facebook.”

Need for connectivity on SNSs. The need for connectivity on SNSs was measured by five 7-point Likert-type items adapted from Leary, Kelly, Cottrell, and Schreindorfer (2005) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Reliability in this study was moderate ($\alpha = .83$; $M = 3.00$, $SD = 1.24$). Sample items include, “I try hard to do things that other people expect me to do on Facebook,” and “I want other people to accept me on Facebook.”


Perceived information co-ownership. Perceived information co-ownership was a moderator between need for privacy and connectivity on SNSs, and the management of information boundaries as information co-owner. It was measured by four 7-point Likert-type items adapted from Greene (2009) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability in this study was moderate ($\alpha = .80$; $M = 5.01$, $SD = 1.20$). Sample items include, “I feel that I own information about myself revealed by others on Facebook,” and “I feel I have the authority to determine what information about myself should be posted on Facebook.”

Measures for information boundary management as information owner.

Measures include controlling posts on SNSs [boundary permeability rule], creation and use of exclusive disclosure lists, blocking of certain audiences from disclosure [boundary ownership rule], and the creation of restricted list and size of audiences in the restricted list [boundary linkage rule].

Controlling posts on SNSs. The extent to which participants regulate what to post on SNSs was measured by four 7-point Likert-type items adapted from Child et al. (2009)

with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability in this study was acceptable ($\alpha = .71$; $M = 5.26$, $SD = 1.00$). Sample items include, “When I post on Facebook, I consider whether the information that I am about to post is appropriate to share with others,” and “I have limited the personal information posted on Facebook.”

Creation of exclusive disclosure list. The creation of exclusive disclosure lists was measured by 0 (not having any friend list) and 1 (having at least one friend list) based on participants’ responses to the question “Referring to the images below, report the name and the number of friends in ALL friend lists with an icon . The questionnaire came with a few images that helped participants to locate the name of each friend list and the number of friends in each friend list. Among all participants, 114 (27.7%) created at least one friend list on their Facebook account.

Size of audiences in the restricted list. The size of audiences in the restricted list was measured by an item from Wisniewski (2012), “Count and report the number of friends on your restricted list. Put “0” if no one is in the list.” A screenshot to guide participants to the relevant setting was provided. Among all participants, 337 (81.8%, with 7 missing data) did not put anyone in the restricted list. Because the distribution of the size of restricted audiences was highly skewed with a median count of 0 ($M = 1.15$, $SD = 4.93$, range: 0-66), and also given that the size of restricted audiences is more likely to reflect the extent to which people are mindful of who may or may not have access to their information rather than whether they restrict anyone’s access or not, all data including 0 was log transformed. In order to transform the 0 value, a value 1 was added to all participants’ reported size of restricted friends (Scealy, Phillips, & Stevenson, 2004), $M = .11$, $SD = .30$, range: 0-1.79).

Creation of restricted lists. The creation of restricted lists was measured using the data collected from the size of restricted friends (see above). Participants who have any friend in the restricted list were coded as 1 ($n = 68$, 16.5%) and the others who do not have any friend in the list were coded as 0 ($n = 337$, 81.8%). There were 7 missing data (1.7%).

Blocking certain audiences from disclosure (behavioral measure). Blocking certain audiences from disclosure was measured using behavioral data collected via Facebook API. Participants who blocked anyone when making posts were coded as 1 and the others who did not ever block others were coded as 0. The number of participants who blocked others when making posts was 33 (8.0 %, $N = 412$); for each collected post, when individuals uploaded it by blocking any individual, Facebook API provides a unique code of blocking. The use of blocking was coded in a way that participants who had a post with this code were coded as 1 and the other participants who did not have this code in the message (that is, if they did not use blocking at all) were coded as 0.

Blocking certain audiences from disclosure (perceptual measure). Participants' perceived use of the blocking function for disclosures was measured by one 7-point Likert-type item developed by the author with responses ranging from 1 (*Never*) to 7 (*Always*), $M = 2.71$, $SD = 1.58$. The item was, "How often do you post a status update excluding some friends?"

Use of exclusive disclosure lists (behavioral measure). Participants' use of exclusive disclosure lists was measured using behavioral data that were collected via Facebook API. For each collected post, when the post was targeted towards any friend lists, API provides a unique code. The use of friend lists for making exclusive posts was

coded in a way that participants who had a post with this code were coded as 1 and the other participants who did not have this code in the post (that is, if they did not post to any friend lists) were coded as 0. The number of participants who used friend lists to make exclusive posts was 13 (3.2%, $N = 412$).

Use of exclusive disclosure lists (perceptual measure). Participants' perceived use of exclusive disclosure lists was measured by one 7-point Likert-type item developed by the author with responses ranging from 1 (*Never*) to 7 (*Always*), $M = 3.13$, $SD = 1.45$. The item was, "How often do you post a status update to the selected group of friends using privacy features (e.g., Facebook groups or Facebook friend lists)?"

Measures for information boundary management as information co-owner. Measures included monitoring tagging (i.e., negotiation of other-generated information boundaries) and breaking other-generated information boundaries. Untagging and deleting others' posts were both considered as a way to break information boundaries that others have created. Therefore, I considered both activities as similar conceptually to explain the negotiation of other-generated information boundary and combined them to create a measure "negotiation of other-generated information boundaries."

Breaking other-generated information boundaries. The tendency to break other-generated information boundaries was measured by two 7-point Likert-type items adapted from Wisniewski (2012), with responses ranging from 1 (*Never*) to 7 (*Always*). The reliability in this study was acceptable ($\alpha = .72$; $M = 3.36$, $SD = 1.23$). Sample items included, "How often have you deleted posts that others made on your timeline?" and "How often have you untagged yourself in a photo or post that was posted by others?"

Negotiation of other-generated information boundaries. Whether or not participants negotiate other-generated information boundaries was measured using a question shown on the relevant Facebook setting, Do you “Review posts friends tag you in before they appear on your timeline?” with responses including enabled (coded as 2, $n = 143$, 34.7%) and disabled (coded as 1, $n = 269$, 65.3%). A screenshot to guide participants to the relevant setting was provided.

Measures for control variables. Measures included Facebook literacy, Facebook intensity, ethnicity, gender, and age.

Facebook literacy. Facebook literacy was measured by items adapted from Eastin and Larose (2000) using four 7-point Likert-type items with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was moderate ($\alpha = .82$; $M = 5.04$, $SD = 1.06$). Sample items included, “I feel confident describing functions of Facebook features,” and “I feel confident learning advanced skills needed to use Facebook features.”

Facebook intensity. Facebook intensity was measured by items adapted from Ellison et al. (2007) that included two self-report assessments of Facebook behavior such as the number of Facebook friends and the amount of time spent on Facebook on a typical day. The measure also included six 7-point Likert-type items (a sample item was “Facebook is part of my everyday activity.”), with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). All these items were standardized before creating a composite scale. The reliability of the final measure in this study was moderate ($\alpha = .86$; $M = -.0001$, $SD = .71$).

Ethnicity. The ethnicity of participants was recoded into Non-Hispanic White (1) (41.7%) and others (2). The decision for recoding was based on the importance in and compatibility of the ethnicity categories across analyses. First, because ethnicity was a control variable, it was not necessary to examine the impact of each ethnicity on the dependent variables. Second, including all ethnicities in some logistic regression models as dummy variables led to extremely high standard errors or odds ratio.

Gender. Participants' gender was measured by asking them "Please state which gender you identify yourself." Among all participants, 267 (64.8%) were female and 133 (32.3%) were male (2.9% did not report gender).

Age. Participants' age was measured by asking the year born and subtracting this born year from the year of the survey participation (2015). The age of participants ranged from 18 to 52 years old and was skewed with the median 20 years old ($M = 20.66$, $SD = 3.61$). As a result, the age was recoded into two categories. Participants whose age ranged between 18 to 20 years old were coded as 1 ($n = 241$, 58.5%) and the other participants whose age was greater than 20 were coded as 2 ($n = 146$, 35.4%). There were 25 missing data (6.1%) in age.

Measures for cognitive outcomes of the use of privacy features. Measures included perceived sense of privacy control and perceived risks of privacy violation.

Perceived sense of control. The perceived sense of control was measured by four 7-point Likert-type items adapted from Youn (2009) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was moderate ($\alpha = .89$; $M = 4.98$, $SD = 1.10$). Sample items included, "I feel confident dealing with the ways

that I can control who will see my information posted on Facebook,” and “I have control over information on Facebook.”

Perceived risks of privacy violation. Perceived risks of privacy violation was measured by four 7-point Likert-type items adapted from Vitak (2012) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was moderate ($\alpha = .85$; $M = 4.71$, $SD = 1.25$). Sample items included, “I am careful in what I post to Facebook because I worry about people who are not my Friends seeing it,” and “I am concerned that people I do not want to see my post will see it.”

Measures for disclosure outcomes. Measures include perceived frequency, breadth, and depth of self-disclosure.

Perceived frequency of self-disclosure. The frequency of self-disclosure was measured by one 7-point Likert-type item adapted from Wisniewski (2012), “How often do you post a status update to Facebook friends?” with responses ranging from 1 (*Never*) to 7 (*Always*), $M = 2.91$, $SD = 1.29$.

Perceived breadth of self-disclosure. The perceived breadth of self-disclosure was measured by four 7-point Likert-type items adapted from Parks and Floyd (1996) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was acceptable ($\alpha = .75$; $M = 3.81$, $SD = 1.35$). Sample items included, “My disclosures on Facebook cover diverse issues,” and “I share a wide variety of topics on Facebook.”

Perceived depth of self-disclosure. The perceived depth of self-disclosure was measured by three 7-point Likert-type items adapted from Parks and Floyd (1996) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Among the three

items, an item was removed to increase reliability and the final reliability of the two remaining items was moderate ($\alpha = .88$; $M = 2.45$, $SD = 1.43$). The remaining items include, “I share in detail how I feel on Facebook,” and “I share intimate or personal things about myself on Facebook.”

Perceived depth of self-disclosures (for each self-disclosure collected via API).

The perceived depth of self-disclosure for posts including a self-disclosure was measured by three 7-point Likert-type items adapted from Bazarova (2012) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was good ($\alpha = .93$; $M = 4.93$, $SD = 1.64$). Sample items included, “This message is personally significant to me,” and “This message reveals what is central to my core self.”

Perceived sense of control for posting (for each self-disclosure collected via API). The perceived sense of control for posting was measured by three 7-point Likert-type items adapted from Bazarova (2012) with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability in this study was good ($\alpha = .93$; $M = 4.93$, $SD = 1.64$). Sample items included, “The message is appropriate to share,” and “The message is normal to share in this context.”

Measures for breadth and depth of self-disclosures collected via Facebook API

The breadth and depth of self-disclosures were measured by coding each post for topic and the degree of depth for all posts including self-disclosures.

Coded breadth of self-disclosures. In order to measure the breadth of self-disclosure, participants’ posts were sampled for content analysis and the procedure for content analysis is described in detail in the following section. Among five different

topics (i.e., personal, social, relational, social gathering, and others) used for coding, “personal” and “social” were considered to include a self-disclosure. The breadth of self-disclosures was measured by adding the number of topics that each participant shared on Facebook among two self-disclosure topics (personal and social) (see Table 5 for details), $M = 1.07$, $SD = .25$.

Coded depth of self-disclosures. The depth of self-disclosures was measured by averaging the coded depth of posts including self-disclosures. The code of intimacy was 1 (low) and 2 (high), $M = 1.19$, $SD = .35$. Among the participants who made self-disclosures ($n = 130$), 121 shared about only one topic and the rest nine participants shared about two topics.

Table 1 includes descriptive statistics of all study variables and Table 2 includes correlation analysis results of all study variables.

Table 1. *Descriptive Statistics of All Measured Variables*

	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	α
Need for privacy	5.10	1.08	-.38	.04	.77
Need for connectivity	3.00	1.24	.25	-.58	.83
Perceived ownership	5.01	1.20	-.42	-.12	.80
Facebook intensity	.00	.71	-.32	-.16	.86
Facebook literacy	5.04	1.06	-.46	.39	.82
Controlling posts	5.26	1.00	-.50	.20	.71
Creation of exclusive disclosure lists	.28	.45	1.00	-1.00	NA
Use of exclusive disclosure list (P)	3.13	1.45	.29	-.52	NA
Use of exclusive disclosure list (B)	.03	.18	5.38	27.07	NA
Block others from disclosure (P)	2.71	1.58	.70	-.22	NA
Block others from disclosure (B)	.08	.27	3.11	7.68	NA
Creation of restricted list	.17	.37	1.78	1.19	NA
Size of audiences in the restricted list*	.11	.30	2.99	9.07	NA
Negotiation of other-generated boundaries	1.65	.48	-.65	-1.59	NA
Breaking other-generated boundaries	3.36	1.23	.11	-.28	.72
Perceived sense of control	4.98	1.10	-.60	.66	.89
Perceived risks of privacy violation	4.71	1.25	-.36	.15	.85
Frequency of self-disclosure (P)	2.91	1.29	.35	-.28	NA
Breadth of self-disclosure (P)	3.81	1.35	-.23	-.63	.75
Depth of self-disclosure (P)	2.45	1.43	.77	-.35	.88
Depth of self-disclosure (API-C)	1.19	.35	1.61	1.05	NA
Breadth of self-disclosure (API-C)	1.07	.25	.41	6.29	NA
Depth of self-disclosure (API-P)	4.93	1.64	-.79	.25	.93
Perceived sense of control (API-P)	5.69	1.26	-1.73	5.05	.71

P: Perceptual measure

B: Behavioral measure

API-C: Coded measure of post

API-P: Perceptual measure of post

*data were log-transformed due to high skewness

Table 2. Zero-Order Correlation Matrix for All Study Variables ($N = 412$)

	1	2	3	4	5	6	7	8	9	10	11	12
1 Need for privacy	1.00											
2 Need for connect	-.179**	1.00										
3 Perceived ownership	.265**	.02	1.00									
4 Facebook intensity	-.197**	.337**	.154**	1.00								
5 Facebook literacy	.08	.02	.106*	.266**	1.00							
6 Controlling posts	.254**	-.05	.242**	.07	.246**	1.00						
7 Creation of exclusive disclosure lists	.02	.03	.141**	.230**	.10	.06	1.00					
8 Use of exclusive disclosure lists(P)	-.08	.277**	-.06	.101*	.05	-.01	.103*	1.00				
9 Use of exclusive disclosure lists(B)	.08	-.09	.10	-.02	.04	.05	.292**	.08	1.00			
10 Blocking others from disclosure (P)	-.08	.304**	.02	.116*	-.01	-.03	.09	.543**	.184**	1.00		
11 Blocking others from disclosure (B)	.04	.04	.06	.126*	.134**	.09	.257**	.116*	.151**	.197**	1.00	
12 Creation of restricted list	.07	.08	.05	.04	.05	.07	.03	.114*	-.01	.07	.06	1.00
13 Size of audiences in the restricted list	.08	.06	.07	.03	-.01	.07	.06	.06	.02	.04	.115*	.861**
14 Monitor tagging	-.106*	.00	-.04	.06	.02	.08	-.05	-.120*	-.04	-.194**	-.09	-.02
15 Breaking other-generated boundaries	-.01	.150**	.09	.05	.05	-.04	.02	.187**	.00	.329**	.02	.118*
16 Perceived sense of control	.098*	-.03	.250**	.230**	.435**	.286**	.124*	-.06	.06	-.04	.06	.05
17 Perceived risks of privacy violation	.206**	.171**	.201**	.06	.02	.343**	.06	.07	.02	.161**	.06	.09
18 Frequency of self-disclosure(P)	-.237**	.235**	-.03	.280**	.05	-.02	.05	.474**	.04	.420**	.08	.102*
19 Breadth of self-disclosure (P)	-.203**	.140**	-.02	.172**	.01	-.119*	.01	.186**	-.04	.224**	-.08	.06
20 Depth of self-disclosure (P)	-.287**	.364**	-.116*	.157**	-.03	-.252**	-.07	.312**	-.09	.376**	-.05	.102*
21 Depth of self-disclosure (API-C)	-.04	.02	.07	.152**	.04	-.01	.307**	.108*	.119*	.134**	.321**	.03
22 Breadth of self-disclosure (API-C)	.01	.04	-.03	-.08	-.04	.03	.04	.02	.182*	.09	.17	.191*
23 Depth of self-disclosure (API-P)	-.05	.06	.05	-.05	-.02	-.03	-.04	.07	.00	.06	-.10	.06
24 Perceived sense of control (API-P)	0.017	-0.111	0.14	0.006	0.039	0.17	0.042	-.212*	0.093	-0.17	-.215*	-0.052

Table 2. *Continued*

	13	14	15	16	17	18	19	20	21	22	23	24
13 Size of audiences in the restricted list	1.00											
14 Monitor tagging	.01	1.00										
15 Breaking other-generated boundaries	.09	-.245**	1.00									
16 Perceived sense of control	.05	.08	-.06	1.00								
17 Perceived risks of privacy violation	.112*	-.07	.205**	.04	1.00							
18 Frequency of self-disclosure(P)	.08	-.06	.106*	.08	.04	1.00						
19 Breadth of self-disclosure (P)	.04	-.05	.05	.05	-.01	.374**	1.00					
20 Depth of self-disclosure (P)	.03	-.09	.172**	-.123*	-.06	.379**	.434**	1.00				
21 Depth of self-disclosure (API-C)	.08	.00	.01	.04	-.03	.188**	.144**	.07	1.00			
22 Breadth of self-disclosure (API-C)	.12	.02	.07	-.09	.02	.04	.03	.01	.12	1.00		
23 Depth of self-disclosure (API-P)	.05	-.04	.03	.11	.00	.16	.13	.11	-.04	.14	1.00	
24 Perceived sense of control (API-P)	-0.102	0.052	0.047	0.13	-0.051	-0.003	0.029	-0.122	-.200*	0.129	.389**	1

P: Perceptual measure

B: Behavioral measure

API-C: Coded measure of post

API-P: Perceptual measure of post

** $p < .01$

* $p < .05$

Coding of Facebook Posts

This section will describe procedures of coding; sampling of status updates (hereafter, posts) from Facebook API for coding, the coding scheme, coder training, and coding results.

Sampling of posts for coding. The project examines whether individuals who use privacy features (i.e., using exclusive disclosure lists or blocking others) may disclose about self more frequently, broadly, and deeply than others who make posts without using such features. In order to examine this problem, the project designed an online application that retrieved posts from diverse target categories (all friends, friend lists, Facebook group, and selected friends by blocking some friends). Based on the availability of posts within the past six months prior to the survey participation, the application collected the six most recent posts containing more than three words from each target category.²

Table 3 shows participants who did or did not use privacy features when making posts on Facebook. Among the participants who posted on Facebook ($n = 216$), 120 participants (55.6%) made posts without using any privacy features (that is, all posts of these participants were toward all Facebook friends). There were 96 participants (44.4 %) who used privacy features to make posts.

Among all posts collected via Facebook API ($N = 1407$), 985 posts were made to all Facebook friends; however, 154 posts were made using privacy features; 129 were made by excluding any friends or friends in friend lists and 25 posts were exclusively to friend lists. Lastly, 268 posts were targeted to Facebook groups.

² Facebook groups were conceptually considered as similar to exclusive friend lists and thus Facebook group posts were also collected in addition to posts from exclusive disclosure lists (i.e., friend lists).

Table 3. *Targets of Posts Categorized by the Use of Privacy Features*

	Number of participants who made posts using the target category	%
Targets of posts made without using privacy features		
All friends	120	55.56
Targets of posts made using privacy features		
All friends and selected friends*	20	9.26
All friends, selected friends,* and groups	12	5.56
Selected friends*	10	4.63
Selected friends* and groups	3	1.39
All friends and groups	39	18.06
Groups+	12	5.56
Total	216	100.00

* Selected friends: friends in friend lists or friends targeted by blocking others

+ Deleted from data analyses for Hypotheses 6 and 7

In order to examine Hypotheses 6 and 7 (i.e., how the use of privacy features influence self-disclosure outcomes), it was important to compare self-disclosure outcomes between participants who use privacy features and participants who do not use privacy features to make self-disclosures. However, the proportion of posts made using privacy features ($n = 422$, posts made using privacy features and Facebook group) was not even compared to the posts that were made to all friends ($n = 985$). Therefore, I sampled posts in a way to balance the ratio of self-disclosure posts from each target category. First, given the possibility that not all posts made using privacy features may contain a self-disclosure, which may increase the ratio between self-disclosure posts made by not using any privacy features (i.e., all friends) and self-disclosure posts made using privacy features, all posts made using privacy features were coded. Among the participants who used privacy features to make posts ($n = 96$), 422 posts were sampled for coding. On average, it was estimated that each participant provided three posts using privacy features. In order to compare the level of self-disclosure depth at an individual level for these participants, three posts towards all friends were selected for coding using systematic random sampling.

Lastly, to compare the level of self-disclosure depth between participants who used privacy features and participants who did not use privacy features, a maximum of 3 out of all collected posts were sampled for coding using systematic random sampling for the participants who posted to all friends without using any privacy features ($n = 120$).

In sum, the total number of posts sampled for coding were 884, with 521 posts (58.9%, 5 posts deleted due to false data) targeted to all friends, 213 posts (24.1%, 55 posts that target public groups not coded) targeted to groups, and the other 150 posts

targeted to selected friends by either blocking or exclusively posting to friend lists (17.0%, 4 posts deleted due to false data).

The following section describes how a Facebook post was coded for 1) whether it contains a self-disclosure or not, 2) what the topic of the post is, and 3) the depth (intimacy) of post.³

Revising the coding scheme. Originally, the coding categories (the nature of posts for coding a self-disclosure and the topic for coding breadth) (Table 4) were created based on previous research (Naaman, Boase, & Lai, 2010). After collecting data and reviewing collected posts prior to coding (December, 2016), I realized that self-disclosure (i.e., self-disclosure is defined as the revelation of information about personal feelings, opinions, and thoughts; Chelune, 1979) patterns on Facebook may all fit under the category of the nature of posts (i.e., opinions/complaints, statements and random thoughts, about my status, and anecdote) in the previous coding scheme. Therefore, in order to avoid redundancy when coding a post for a self-disclosure, the original coding scheme for the nature of posts was modified into two categories; “self-disclosure” and “not a self-disclosure” (Table 5).

Next, from the collected data, I found that multiple topics may appear in one post, making the coding of topic for each unit (i.e., a Facebook status update) complicated. For example, based on the original coding scheme (Table 4) when a person shares his/her personal feelings from being involved in a social activity on a status update, that status update can be coded either as 1 (personal state/feeling) or 2 (personal activity). In this case, it was unclear whether the breadth of topic is 1 or 2 for a post. Therefore, a post that

³ Later, the depth of self-disclosures were calculated by taking the average depth of all self-disclosures of each participant.

captures personal feelings, states, or activities described in the breadth category (Table 4) were grouped into one topic category: *personal*. In addition to the *personal* category, political or religious opinions or thoughts were grouped into one category; “*social identity*.” Categorizing posts that reveal political or religious opinions into one group is to avoid any redundancy in coding because personal thoughts or feelings about religious or political topics may both represent one’s reflection of self in social groups (Brewer & Gardener, 1996).

Last, in the final coding scheme, a new category that captures the original breadth category 4 (social; see Table 4) was added with some modifications. This code applies to a post that mentions others by sharing information about them (e.g., Ayo my sister is a champion and an article she wrote is on the front page of the Boston Globe website!) or feelings about them (e.g., My brother and his wife's wedding was so amazingly beautiful, I love you guys so much.). This topic category was labeled as “*relational identity*.” In addition to the categories of *personal*, *social identity*, and *relational identity*, another category, *social gathering*, was added to capture posts that aim to announce meetings or gatherings. Any post that contains information other than *personal*, *social identity*, *relational identity*, and *social gathering* were coded into *other* (see Table 5).

The degree to which a post contains information about core-self was coded into three levels of depth. The depth of post was categorized in a way that a post that includes the disclosure of core self was coded as high intimacy (level 3). A post that includes the disclosure of information that one may consider as appropriate to share with some fairly close individuals was coded as moderate intimacy (level 2). A post that includes the disclosure of mundane and superficial aspects about self that could be shared with anyone

was coded as low intimacy (level 1). Because self-disclosures were not filtered before coding,⁴ the depth of post was coded for all sampled posts regardless of whether it contains a self-disclosure.

Coder training and coding. For content analysis, I recruited two coders and trained them to code posts for the degree of intimacy (depth), topic, and self-disclosure (see Table 5 for the description of coding scheme). At the first meeting for content analysis, the coders had time to become familiar with the coding scheme. After the first meeting, I began training the coders by having each coder individually test-code 150 Facebook posts. The results of the test coding were lower than the minimum level of intercoder reliability for the exploratory research (Krippendorff's $\alpha = .70$), which led to additional meetings for clarifying and revising the coding scheme. After I confirmed that the intercoder reliability reached over .80 for all categories for coding, the coders coded the rest of the messages individually.

At the final coding, because the intercoder reliability did not reach the acceptable level of (Krippendorff's $\alpha = .70$), further adjustment was needed in the procedure of coding. Based on the final coding results, I determined that the low reliability was potentially due to the lack of understanding of the coding scheme of one coder.

⁴ The project did not filter out non-self disclosure posts prior to coding because of the possibility that the definition of self-disclosure (Chelune, 1979), which was proposed to code offline context self-disclosures, may not always match the characteristics of self-disclosures that are specific in SNSs (e.g., hanging out with my babe). Thus, the project coded not only whether a post included a self-disclosure but also what the topic of post was. As a result, the depth of post was coded for all posts sampled for coding regardless of whether it contains a self-disclosure.

Table 4. *Coding Scheme for Disclosure Texts from Facebook*

What is the nature of the given text? Choose one from 1~4		
Nature of Posts		Examples
1	Opinions/Complaints	e.g., "Illmatic I do not like this rap album"
2	Statements and random thoughts	e.g., "I like that the sky is blue in the winter here"
3	About my status	e.g., "Tired and upset"
4	Anecdote	e.g., "oh yes, I won an electric steamboat machine and a steam iron at the block party lucky draw this morning!"
5.	Others	Information sharing, talking about others, questions to others, etc

Evaluate the intimacy of this text.

Intimacy (depth)	scale (1-5)	<i>1 indicating lowest intimacy</i> Information intimacy: Information that reveals unique characteristics or experiences about self
Intimacy of disclosure		

(Altman & Taylor, 1973)

What is the topic of this text?

Breadth	Scale (1~8)	<i>1 indicating lowest breadth</i> 1. Personal state/feeling, 2. Personal activity, 3. Comedic, 4. Social (information directed to friends, social events, or songs), 5. Sports-related, 6. Political, 7. Religious, 8. Other
Types of topics		
(Elmasry, Auter, & Peuchaud, 2014)		

Table 5. *Revised Coding Scheme*

code	Self-disclosure post	Definition	Examples
1	Self-disclosure	The verbal communication of personal information about one's self including personal opinions, feelings, and experiences (e.g., revealing one's nationality, sexual orientation, and other demographic information pertains to self-disclosures. Also, an individual who reveals what s/he values and likes is also self-disclosing.	e.g., Personal experience example: After stressing out for so long and working hard I found out today that I officially got into the Rutgers Business School. Thank you to all my friends and family who have supported me along the way! Opinion example: I still love this show & movies Feelings example: I become frustrated when students do not pay attention to my comments.
2	Not a self-disclosure	The verbal communication of non-personal information (e.g., may include information sharing, talking about others, questions to others, etc.	
code	Topic of post	Definition	Examples
1	Personal (experience, thought, and feeling)	A message that includes personal experiences, routines, thoughts.	e.g., I still love this show & movies.
2	Social identity (occupation, religion, politics)	A message that identifies self in relation to a social group.	e.g., Nice to see some judges who aren't liberal lapdogs that are willing to slap Obama's hiney!!
3	Relational identity	A message that identifies self within a relationship—may explicitly target other(s) to emphasize the relationship value; may often include a birthday wish or obituary.	e.g., Happy Father's day to my role model and my arch enemy sometimes God bless you for having to deal with me but I would not be anywhere without you're help
4	Social gathering	A message that aims to gather social gatherings or meetings.	e.g., Hey guys! Here is a list of a bunch of really awesome (and normally really expensive) items that are on super sale until midnight tonight.
5	Other (requests for help, information sharing)		e.g., 1. anyone have a rig I can borrow for tonight? Help a sista out. / 2. "The Latina girls are going to go crazy" - Justin Bieber
code	Depth of post	Definition	Examples
1	Low intimacy (likes, and dislikes, hobbies, or habits)	Information that can be shared with anyone, even a stranger	e.g., Always believe in healthy life and good shape./ I still love this show & movies.
2	Moderate intimacy	Information that may be considered appropriate to share only with some people to whom disclosers feel fairly close	e.g., Hello. I'm so deeply in love with my sexy, wonderful, amazing, sexy, strong, kind-hearted, sexy boyfriend!
3	High intimacy (personality, shortcoming, health, feelings such as guilt, hurt, and anger)	May include negative information about self that is face-threatening or positive information about self that is ego-relevant. Also when recipients feel social pressure to reciprocate at an equally intimate level.	e.g., Negative: The first time I really knew that my being Black wouldn't always be excepted was <i>when I was about 8 and my Nana called a pool to be told that it was "Whites only"</i> . (potentially stigmatizing information) / Positive: That new bestseller really inspired me and touched my heart. <i>I feel I can accomplish so much now and change the lives of many.</i>

Because this coder could not conduct additional coding, I participated as the third coder, coded all messages, and conducted the reliability between my codes and the remaining coder's results, which led to the final reliability of .70 across both topic (Krippendorff's $\alpha = .66$) and depth (intimacy; (Krippendorff's $\alpha = .76$) after some adjustments of coding categories (topic categories for social gathering and others were grouped into one category and intimacy levels 2 and 3 were combined due to very few posts coded as high intimacy).

The reliability for self-disclosure was still lower than acceptable (Krippendorff's $\alpha = .57$); thus, I decided not to use the coded results for self-disclosure. Instead, the results of coding for topic were used to categorize self-disclosure vs. non-self-disclosure because the topic categories 1 (personal) and 2 (social/religious identity) cover all self-disclosures. A post coded as relational identity or social gathering/other was not considered a self-disclosure and removed when calculating the coded breadth and depth of self-disclosures.⁵ Ultimately, all disagreements in coding for topic and depth were resolved through discussion to arrive the final code.

Results of Coding

After coding was completed, group posts were not used in the analyses because a majority of posts targeted to Facebook groups were categorized into "other." Among the total coded posts ($N = 671$) excluding posts to groups, the number of self-disclosures about personal matters was 244 (36.4%) and the number of self-disclosure revealing social identity was 19 (2.8%). The number of posts including relational identity was 88

⁵ In the post coded into "relational identity" category, individuals mention about others (but not about self) and express their appreciations for the connection with others. As a result, a post coded into the relational identity category was not considered to contain a self-disclosure.

(13.1%) and the number of social gathering and other topics was 314 (46.8%) (Table 6).

The average number of topics (i.e., breadth) the participants shared including the “other/social gathering” topic category was $M = 2.1$, $SD = .73$. Among all participants who had a post on Facebook, 135 (62.5%) participants made at least one self-disclosure and the average number of self-disclosure topics (i.e., self-disclosure about personal matters and self-disclosure of social identity) that a participant shared was $M = 1.1$, $SD = .25$.

The depth of post for self-disclosures was calculated by taking the average of depths of self-disclosures that each participant shared (Table 7). Coded depth for all posts and self-disclosures were log transformed because they were positively skewed.

Table 6. *Coded Depth and Perceived Depth per Topic*

Topic	Number of posts	%	Coded depth <i>M(SD)</i>	Perceived depth <i>M(SD)</i>
Personal	244	36.4	1.15 (.36)	4.74 (1.80)
Social identity	19	2.8	1.63 (.50)	6.09 (.87)
Relational identity	88	13.1	1.26 (.44)	5.59 (1.38)
Social gathering / Other	314	46.8	1.02 (.13)	4.96 (1.66)
Deleted	6	0.9		
<i>Total</i>	671	100		

Table 7. *Coded Depth and Perceived Depth of Self-Disclosures Targeting All Friends and for Self-Disclosures Posted Using Privacy Features (Using Friend Lists or by Blocking)*

	Number of posts	%	Coded depth <i>M(SD)</i>	Perceived depth <i>M(SD)</i>
All friends	255	76.8	1.18 (.39)	5.15 (1.67)
Privacy features	77	23.2	1.17 (.38)	4.34 (1.83)
<i>Total</i>	332	100		

Note. Coded depth range, 1-2; Perceived depth range, 1-7

Chapter 4: Results

This chapter will describe findings from the statistical analyses for hypotheses (H) and research questions (RQ). Findings will be described in the order of hypotheses and research questions as proposed in Chapter 2. For H1 to H5, and RQs 2 and 3—which examine how SNS users’ needs for privacy and connectivity influence the management of self and other-generated information boundaries—several variables were controlled: demographics (gender, age and ethnicity), Facebook intensity, and Facebook literacy. In some instances, more variables had to be controlled (described in more detail as relevant in later sections).

Finally, based on preliminary analyses, Facebook intensity and Facebook literacy were found to be strong predictors of the management of both self-generated information boundaries (i.e., creating exclusive disclosure lists, blocking certain audiences from disclosure, creating a restricted list, and the size of a restricted list) and other-generated information boundaries (i.e., monitor tagging, and breaking other-generated information boundaries). The positive association between Facebook intensity and the management of privacy was also found in previous research; people who are active on Facebook to achieve social capital are active in using privacy settings (Ellison, Vitak, Steinfield, Gray, & Lampe, 2011). Further, it is assumed that people who have a higher literacy level for using SNSs are more likely to understand functions of technological features and to make educated choices for privacy than their counterparts (see Debatin, 2010).

To account for the impact of Facebook intensity and Facebook literacy on the association between needs for privacy/connectivity and the management of information boundaries, I included Facebook intensity and Facebook literacy not only as control variables but also as possible moderators in the relationship between needs for privacy

and connectivity and the management of information boundaries. Including Facebook intensity and Facebook literacy as moderators in the hypothetical model will allow for teasing out how needs for privacy and connectivity relate to information boundary management per different privacy affordances (i.e., creating exclusive disclosure list, blocking certain audiences or breaking others' information boundaries) according to the levels of Facebook use and/or familiarity with the affordance. Therefore, interaction terms between needs for privacy and connectivity, and both Facebook literacy and intensity were entered in the last block of regressions for all analyses. The following section reports results of hypothesis testing.

Need for Privacy on SNS and the Coordination of Self-Generated Information

Boundaries (H1)

In order to examine the influence of the need for privacy on the management of self-generated information boundary, a series of regression analyses were conducted for each management strategy (i.e., the coordination of boundary permeability [controlling posts], ownership [creating exclusive disclosure lists], and linkage rules [blocking or restricting audiences]). The results of each hypothesis test are reported in what follows.

Hypothesis 1a. Hypothesis 1a predicted that the need for privacy on SNSs positively influences controlling posts on SNSs.⁶ A multiple linear regression analysis was conducted to test this prediction. Findings show that the need for privacy had a statistically significant and positive influence on controlling posts on SNSs, $\beta = .25$, $p < .001$ (Table 8). People's desire for privacy led to their effort to screen information before posting on Facebook. The need for privacy explained 6% of the variance in screening

⁶ Hereafter, when reporting results, I use Facebook instead of SNSs because the study used Facebook as the research context and measurement items also used Facebook rather than SNSs.

posts on Facebook after controlling for demographics, Facebook intensity, and Facebook literacy, $F(6, 374) = 12.47, p < .001$. Therefore, the hypothesis was supported. Among control variables, gender and Facebook literacy had statistically significant influences on controlling posts on SNSs. Women were more likely than men to screen posts, $\beta = .20, p < .001$. The greater the level of Facebook literacy, the more likely people screened posts on SNSs, $\beta = .18, p < .001$.

Hypothesis 1b. Hypothesis 1b predicted that the need for privacy on SNSs positively influences creating exclusive disclosure lists. A logistic regression analysis was conducted because creating exclusive disclosure lists on SNSs was a binary variable. In order to examine the impact of only the need for privacy on creating exclusive disclosure lists, demographics, Facebook intensity and Facebook literacy were controlled in the regression model. The addition of the need for privacy did not add a statistically significant variance to the model; people's need for privacy did not predict whether or not they divided audiences into several groups on Facebook using exclusive disclosure lists, $\text{Exp B} = 1.18, B = .17, p = .17$ (Table 9). Therefore, the hypothesis was not supported. Among control variables, Facebook intensity had a statistically significant influence on creating exclusive disclosure lists. The greater Facebook intensity was, the more likely people created exclusive disclosure lists, $\text{Exp B} = 2.36, B = .86, p < .001$.

Table 8. *The Influence of the Need for Privacy on Controlling Posts on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.25(4.95)***	.23(4.74)***	.20(4.17)***	.20(4.13)***
Age	-.05(-1.02)	-.06(-1.28)	-.02(-.47)	-.06(-1.26)
Ethnicity	-.04(-.71)	-.02(-.32)	-.06(-1.27)	-.02(-.47)
Facebook Intensity (FI)		-.04(-.68)***	.03(.56)	.03(.60)
Facebook Literacy (L)		.22(4.33)	.18(3.70)***	.18(3.67)***
Need for Privacy (NP)			.24(4.96)***	.25(4.95)***
NP*FI				-.01(-.21)
NP*L				.01(.28)
<i>adjusted R</i> ²	.06	.10	.15	.15
ΔR^2	.07***	.05***	.06***	.00
<i>R</i> ²	.07	.11	.17	.17
<i>F</i>	9.04***	9.45***	12.47***	9.31

*** $p < .001$

Gender. 1: Male, 2: Female

Ethnicity. 1; White, Non-Hispanic, 2: Others

Table 9. *The Influence of the Need for Privacy on Creating Exclusive Disclosure Lists on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.72(.26)	-.60(.27)*	-.57(.27)*	-.53(.27)	.59
Age	.42(.23)	.53(.24)*	.54(.24)*	.54(.25)*	1.71
Ethnicity	-.01(.23)	-.01(.24)	.00(.24)	-.01(.24)	.99
Facebook Intensity (FI)		.74(.19)***	.80(.20)***	.86(.21)***	2.36
Facebook Literacy (L)		.10(.12)	.08(.12)	.07(.12)	1.07
Need for Privacy (NP)			.14(.12)	.17(.12)	1.18
NP*FI				-.20(.17)	.82
NP*L				.09(.11)	1.10
Step (χ^2)	10.71*	20.04***	1.47	1.49	
Model (χ^2)	10.71*	30.75***	32.22***	33.70***	
Nagelkerke R ²	.01	.000	.000	.000	

*** $p < .001$, * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Given that people who feel a need for privacy may create exclusive disclosure lists in order to make posts on Facebook, an additional analysis was conducted with the *use* of exclusive disclosure lists as the dependent variable (operationalized as whether to use a friend list when making posts or not). The analysis was conducted only for participants who already possessed a minimum of one friend list ($n = 114$). In order to examine the impact of only the need for privacy on the use of exclusive disclosure lists, demographics, Facebook intensity and Facebook literacy were controlled in the regression model. The addition of the need for privacy did not add a statistically significant variance to the model. That is, there was no statistically significant association between the need for privacy and the use of exclusive disclosure lists among individuals who had a friend list, $\text{Exp } B = 1.27$, $B = .24$, $p = .57$ (Table 10). Therefore, the hypothesis was not supported. Among control variables, Facebook intensity had a statistically significant influence on the use of exclusive disclosure lists. The greater the Facebook intensity, the less likely that people used exclusive disclosure lists when making posts, $\text{Exp } B = .11$, $B = -2.23$, $p < .05$.

This model that used a behavioral measure as the dependent variable was compared with another model that used participants' perception of using privacy features to make posts as the dependent variable. A multiple linear regression analysis was conducted to examine the influence of the need for privacy on the perceived use of privacy features while controlling for demographics, Facebook intensity and Facebook literacy. Findings did not reveal any statistically significant association between the need for privacy and the perceived use of privacy features when making posts on Facebook, $\beta = .49$, $p = .42$ (Table 11).

Table 10. *The Influence of the Need for Privacy on Using Exclusive Disclosure Lists (Behavioral Measure; n=114)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-19.40(>10)	-19.32(>10)	-19.33(>10)	-19.33(>10)	0
Age	1.01(.66)	.81(.72)	.81(.72)	1.11(.77)	3.05
Ethnicity	-.91(.72)	-1.32(.79)	-1.33(.80)	-1.28(.82)	.28
Facebook Intensity (FI)		-1.54(.60)*	-1.51(.64)*	-2.23(.89)*	.11
Facebook Literacy (L)		.42(.35)	.42(.35)	.35(.36)	1.42
Need for Privacy (NP)			.05(.35)	.24(.42)	1.27
NP*FI				.83(.71)	2.30
NP*L				.20(.32)	1.23
Step (χ^2)	11.13*	8.14**	.02	3.53	
Model (χ^2)	11.13*	19.27**	19.29**	22.82**	
Nagelkerke R ²	.001	.002	.004	.004	

** $p < .01$, * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 11. *The Influence of the Need for Privacy on Using Exclusive Disclosure Lists (Perceptual Measure; N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	-.04(-.34)	-.05(-.41)	-.03(-.26)	-.06(-.48)
Age	.27(2.15)*	.26(2.13)*	.28(2.26)*	.28(2.20)*
Ethnicity	.10(.77)	.06(.46)	.06(.44)	.06(.46)
Facebook Intensity (FI)		-.22(-1.76)	-.21(-1.72)	-.24(-1.85)+
Facebook Literacy (L)		-.03(-.23)	-.01(-.12)	.00(.03)
Need for Privacy (NP)			.18(1.46)	.49(.81)
NP*FI				-.38(-.63)
NP*L				.10(.69)
<i>adjusted R</i> ²	.04	.06	.08	.06
ΔR^2	.09	.05	.03	.01
R^2	.09	.13	.16	.18
<i>F</i>	1.89	1.78	1.87	1.48

*** $p < .001$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

People's desire for privacy did not influence the extent to which individuals used privacy features when making posts. Among control variables, age had a statistically significant influence on the perceived use of privacy features when making posts on Facebook. The older the people were, the more likely their perceived use of privacy features increased, $\beta = .28, p < .05$.

Hypothesis 1c. Hypothesis 1c predicted that the need for privacy on SNSs positively influences blocking of certain audiences from disclosure. A logistic regression analysis was conducted to test this relationship for participants who have made posts at least once on Facebook ($n = 216$). To examine the impact of only the need for privacy on blocking audiences, demographics, Facebook intensity and Facebook literacy were controlled. The addition of the need for privacy did not add any statistically significant variance to the model; there was not a statistically significant relationship between the need for privacy and blocking others when making posts, $\text{Exp B} = 1.45, B = .37, p = .12$ (Table 12). Therefore, the hypothesis was not supported. Among control variables, Facebook intensity had a statistically significant influence on blocking certain audiences from disclosure; the more intensely people use Facebook, the more likely they blocked certain audiences, $\text{Exp B} = 1.84, B = .61, p < .05$.

This model that used the behavioral measure of blocking as the dependent variable was compared with another model that used the perceived frequency of blocking ($N = 412$). Demographics, Facebook intensity, and Facebook literacy were controlled. A multiple linear regression did not reveal any statistically significant association between the need for privacy and perceived frequency of blocking on Facebook, $\beta = -.07, p = .21$ (Table 13). In sum, for both statistical tests, the hypothesis was not supported.

Table 12. *The Influence of the Need for Privacy on Blocking Certain Audiences from Disclosure (Behavioral Measure; n=216)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.83(.47)	-.68(.48)	-.63(.48)	-.60(.48)	.55
Age	.49(.38)	.52(.39)	.54(.39)	.52(.39)	1.67
Ethnicity	-.22(.38)	-.36(.40)	-.35(.40)	-.37(.40)	.69
Facebook Intensity (FI)		.42(.31)*	.54(.32)*	.61(.35)*	1.84
Facebook Literacy (L)		.52(.22)	.49(.22)	.52(.23)	1.69
Need for Privacy (NP)			.26(.20)	.37(.24)	1.45
NP*FI				-.16(.28)	.86
NP*L				-.12(.21)	.89
Step (χ^2)	5.08	10.28**	1.69	.92	
Model (χ^2)	5.08	15.36**	17.05**	17.97*	
Nagelkerke R ²	.03	.09	.10	.11	

** $p < .01$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 13. *The Influence of the Need for Privacy on Blocking Certain Audiences from Disclosure (Perceptual Measure; N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.02(.44)	.01(.26)	.02(.44)	.03(.58)
Age	.03(.48)	.04(.67)	.03(.66)	.04(.78)
Ethnicity	.08(1.47)	.07(1.34)	.07(1.38)	.07(1.27)
Facebook Intensity (FI)		.10(1.77)	.08(1.37)	.08(1.34)
Facebook Literacy (L)		-.03(-.62)	-.02(-.42)	-.02(-.35)
Need for Privacy (NP)			-.07(-1.36)	-.07(-1.25)
NP*FI				.06(1.01)
NP*L				.05(.93)
<i>adjusted R</i> ²	-.00	.002	.004	.007
ΔR^2	.007	.008	.005	.008
<i>R</i> ²	.007	.02	.02	.03
<i>F</i>	.86	1.15	1.27	1.32

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Hypothesis 1d. Hypothesis 1d predicted that the need for privacy on SNSs positively influences the creation of a restricted list and the size of the restricted list. Because the number of individuals who are restricted on Facebook was not normally distributed, the variable was log transformed for participants who put friends into a restricted list (with 81.8% of participants, $n=337$, not restricting anyone). A multiple linear regression was conducted with the number of restricted friends on Facebook as the dependent variable. The analysis revealed a statistically significant relationship between the need for privacy and the size of restricted individuals on Facebook, $\beta = .03$, $p = .054$ (Table 14). The need for privacy explained 1% of the variance in the size of restricted individuals, after controlling for demographic, Facebook intensity and Facebook literacy, $F(6, 374) = 2.19$, $p < .05$. Among control variables, ethnicity had a statistically significant influence on restricting access of certain friends; individuals other than Non-Hispanic Whites were more likely to restrict access of others on SNSs, $\beta = .07$, $p < .05$.

Further, a logistic regression was conducted to test the relationship between the need for privacy and the creation of a restricted list. When demographics, Facebook intensity, and Facebook literacy were controlled, the relationship between the need for privacy and the creation of a restricted list approached a statistically significant positive relationship; that is, people's desire for privacy led to the creation of a list of individuals whose access is limited to only the people's public information, Exp B = 1.31, B = .27, $p = .07$ (Table 15). Therefore, the hypothesis was partially supported.

Table 14. *The Influence of the Need for Privacy on the Size of the Restricted Friends on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.04(1.10)	.03(.96)	.02(.69)	.02(.65)
Age	.04(1.28)	.04(1.40)	.04(1.42)	.04(1.40)
Ethnicity	.07(2.29)*	.07(2.21)*	.07(2.17)*	.07(2.17)*
Facebook Intensity (FI)		.03(1.17)	.04(1.62)	.04(1.69)
Facebook Literacy (L)		-.00(-.24)	-.01(-.52)	-.01(-.55)
Need for Privacy (NP)			.03(1.92) ⁺	.03(1.94) ⁺
NP*FI				-.01(-.56)
NP*L				.01(.50)
<i>adjusted R</i> ²	.013*	.011	.018 ⁺	.014
ΔR^2	.021	.004	.01	.001
R^2	.021	.024	.034	.035
<i>F</i>	2.67	1.88	2.19	1.69

* $p < .05$; ⁺Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 15. *The Influence of the Need for Privacy on Restricting Friends on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.29(.31)	-.24(.32)	-.18(.32)	-.20(.32)	.82
Age	.40(.29)	.43(.29)	.45(.29)	.47(.29)	1.59
Ethnicity	-.69(.31)*	-.72(.31)*	-.72(.31)*	-.71(.31)	.02
Facebook Intensity (FI)		.23(.22)	.34(.23)	.33(.23)	1.39
Facebook Literacy (L)		.13(.15)	.10(.15)	.08(.15)	1.09
Need for Privacy (NP)			.28(.15)	.27(.15) ⁺	1.31
NP*FI				.06(.21)	1.06
NP*L				.10(.13)	1.10
Step (χ^2)	8.33*	2.61	3.59 ⁺	.85	
Model (χ^2)	8.33*	10.93 ⁺	14.52*	15.37 ⁺	
Nagelkerke R ²	.04	.05	.07	.07	

* $p < .05$; ⁺Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Need for Privacy and Coordination of Other-Generated Information Boundaries (H2)

In order to examine the influence of the need for privacy on the use of privacy features that afford other-generated information boundary management, several logistic regression analyses and multiple linear regression analyses were conducted. The following section describes the analytical procedure and findings for each hypothesis.

Hypothesis 2a. Hypothesis 2a predicted that the need for privacy on SNSs positively influences the negotiation of other-generated information boundaries. A logistic regression analysis was conducted for monitoring tagging as a binary dependent variable. The analysis revealed that the relationship between the need for privacy and whether to monitor friends for tagging approached a statistically significant positive relationship, after controlling for demographics, Facebook intensity, and Facebook literacy, $\text{Exp } B = 1.52$, $B = .21$, $p = .06$ (Table 16). People who desire privacy on Facebook tended to turn on the privacy setting that alerts them to posts that their friends tagged them into. Therefore, the hypothesis was partially supported.

Hypothesis 2b. Hypothesis 2b predicted that the need for privacy on SNSs positively influences breaking other-generated information boundaries (breaking others' information boundaries) and this was tested with a multiple linear regression analysis. To examine the impact of only the need for privacy on breaking other-generated information boundaries, demographics, Facebook intensity, and Facebook literacy were controlled. Findings show that there was not a statistically significant relationship between the need for privacy and breaking other-generated information boundaries, $\beta = -.01$, $p = .82$ (Table 17). The frequency with which people break the information boundaries that others create did not depend on the degree to which people desire privacy on Facebook. Therefore, the hypothesis was not supported.

Table 16. *The Influence of the Need for Privacy on Monitoring Tagging on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	Exp(B)
	B (SE)	B(SE)	B(SE)	B(SE)	()
Gender	.07(.23)	.10(.24)	.04(.24)	.04(.24)	1.04
Age	.66(.22)**	.65(.22)*	.65(.22)*	.66(.23)*	1.93
Ethnicity	.05(.22)	.06(.22)	.05(.22)	.05(.23)	1.05
Facebook Intensity (FI)		-.15(.16)	-.07(.17)	-.05(.17)	1.33
Facebook Literacy (L)		-.00(.11)	-.03(.11)	-.04(.11)	1.20
Need for Privacy (NP)			.20(.11) ⁺	.21(.11) ⁺	1.52
NP*FI				-.05(.15)	1.28
NP*L				.05(.10)	1.06
Step (χ^2)	9.12*	.90	3.49 ⁺	.32	
Model (χ^2)	9.12*	10.02 ⁺	13.50*	13.82 ⁺	
Nagelkerke R ²	.03	.04	.05	.05	

** $p < .01$; ⁺Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 17. *The Influence of the Need for Privacy on Breaking Other-Generated Information Boundaries on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.04(.68)	.03(.54)	.03(.58)	.03(.57)
Age	-.04(-.81)	-.04(-.81)	-.04(-.81)	-.04(-.78)
Ethnicity	-.28(.79)	-.01(-.19)	-.01(-.18)	-.01(-.20)
Facebook Intensity (FI)		.02(.38)	.12(.27)	.02(.41)
Facebook Literacy (L)		.05(1.00)	.06(1.05)	.06(1.01)
Need for Privacy (NP)			-.02(-.39)	-.02(-.32)
NP*FI				-.03(-.54)
NP*L				.06(1.11)
<i>adjusted R</i> ²	-.01	-.01	-.01	-.01
ΔR^2	.003	.004	.000	.003
<i>R</i> ²	.003	.007	.008	.011
<i>F</i>	.73	.74	.83	.85

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic

Need for Connectivity and Coordination of Self-Generated Information Boundaries (H3)

Hypothesis 3a. Hypothesis 3a predicted that the need for connectivity negatively influences controlling posts on SNSs. A multiple linear regression analysis was conducted to test this prediction. Controlling for demographics, Facebook intensity, and Facebook literacy, the analysis did not reveal a statistically significant relationship between the need for connectivity and controlling posts on SNSs, $\beta = -.07$, $p = .16$ (Table 18). People's need for connectivity did not lead to efforts to screen information posted on Facebook.

Therefore, the hypothesis was not supported. Among control variables, gender and Facebook literacy had statistically significant influences on controlling posts. Women rather than men were more likely to screen posts on SNSs, $\beta = .23$, $p < .001$. With greater Facebook literacy, the more likely people screened posts on SNSs, $\beta = .21$, $p < .001$.

Hypothesis 3b. Hypothesis 3b predicted that the need for connectivity on SNSs negatively predicts the creation of exclusive disclosure lists. A logistic regression analysis was conducted. With demographics, Facebook intensity, and Facebook literacy controlled for, the analysis did not reveal a statistically significant relationship between the need for connectivity and the creation of exclusive disclosure lists, Exp B = .93, B = -.07, $p = .50$ (Table 19). People's need for connectivity did not predict whether or not they divide audiences into groups on Facebook using exclusive disclosure lists. Therefore, the hypothesis was not supported. Among control variables, gender, age, and Facebook intensity had a statistically significant influence on the creation of exclusive disclosure lists. Men rather than women were more likely to create exclusive disclosure lists, B = -.60, $p < .05$. The older people were, the more likely they created exclusive disclosure lists, B = .54, $p < .05$. Last, the greater the Facebook intensity was, the more likely people created exclusive disclosure lists, B = .78, $p < .001$.

Table 18. *The Influence of the Need for Connectivity on Controlling Posts on Facebook*
(*N* = 412)

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.25(4.97)***	.23(4.75)***	.23(4.75)***	.23(4.76)***
Age	-.04(-.70)	-.06(-1.29)	-.01(-.24)	-.06(-1.24)
Ethnicity	-.05(-1.03)	-.02(-.32)	-.01(-.24)	-.01(-.29)
Facebook Intensity (FI)		-.04(-.69)	-.01(-.18)	.00(.01)
Facebook Literacy (L)		.22(4.35)***	.22(4.24)***	.21(4.05)***
Need for Connectivity (NC)			-.07(-1.31)	-.07(-1.40)
NC*FI				.06(1.17)
NC*L				-.04(-.73)
<i>adjusted R</i> ²	.07	.11	.12	.12
ΔR^2	.067***	.045***	.004	.003
<i>R</i> ²	.067	.112	.117	.120
<i>F</i>	9.12***	9.53***	8.24***	6.36***

****p* < .001

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 19. *The Influence of the Need for Connectivity on the Creation of Exclusive Disclosure Lists on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.71(.26)	-.60(.27)*	-.60(.27)*	-.60(.27)*	.55
Age	.43(.23) ⁺	.54(.24)*	.53(.24)*	.54(.25)*	1.71
Ethnicity	.00(.23)	-.00(.24)	-.01(.24)	-.02(.24)	.98
Facebook Intensity (FI)		.75(.19)** *	.78(.20)** *	.78(.21)** *	2.18
Facebook Literacy (L)		.09(.12)	.09(.12)	.09(.12)	1.09
Need for Connectivity(NC)			-.05(.10)	-.07(.11)	.93
NC*FI				.05(.16)	1.05
NC*L				.06(.10)	1.07
Step significance (χ^2)	10.68*	20.17***	.26	.61	
Model significance (χ^2)	10.68*	30.85***	31.11***	31.72***	
Nagelkerke R ²	.04	.11	.11	.11	

*** $p < .001$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Another logistic regression analysis was conducted to examine the influence of the need for connectivity on the use of exclusive disclosure lists. The analysis was conducted only for participants who already possessed a minimum of one friend list ($n = 114$). This analysis revealed no statistically significant association, $\text{Exp } B = .59$, $B = -.53$, $p = .16$ (Table 20).

This analysis that used the behavioral measure of using exclusive disclosure lists when making posts was compared with another model that used participants' perceived use of friend lists to make posts as the dependent variable. A multiple linear regression revealed a statistically significant association between the need for connectivity and the perceived use of privacy features to make posts on Facebook, but the direction of the relationship was opposite to what was predicted, $\beta = .28$, $p < .001$. The more individuals felt a need for connectivity, the more likely individuals reported that they use privacy features when making posts. Therefore, the hypothesis was not supported. In the regression model, the need for connectivity explained 7% of the variance in the perceived use of privacy features when making posts, after demographics, Facebook intensity, and Facebook literacy were controlled, $F(6, 375) = 6.57$, $p < .001$ (Table 21). Among control variables, age had a statistically significant influence on the perceived use of privacy features in a way that older people were more likely to perceive that they used privacy features when making posts, $\beta = .15$, $p < .01$.

Table 20. *The Influence of the Need for Connectivity on Using Exclusive Disclosure Lists on Facebook (Behavioral Measure; n = 114)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-19.40(>10)	-19.32(>10)	-19.11(>10)	-19.38(>10)	.00
Age	1.01(.66)	.81(.72)	.87(.72)	.89(.73)	2.42
Ethnicity	-.91(.72)	-1.32(.79)	-1.40(.81)	-1.12(.84)	.33
Facebook Intensity (FI)		-1.54(.60)*	-1.33(.63)*	-1.67(.72)*	.19
Facebook Literacy (FL)		.42(.35)	.36(.35)	.52(.40)	1.68
Need for Connectivity (NC)			-.40(.34)	-.53(.38)	.59
NC*FI				-.81(.70)	.44
NC*L				.49(.45)	1.63
Step significance (χ^2)	11.13*	8.14*	1.47	1.74	
Model significance (χ^2)	11.13*	19.27**	20.74**	22.48**	
Nagelkerke R ²	.19	.32	.35	.37	

*** $p < .001$; ** $p < .01$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 21. *The Influence of the Need for Connectivity on Using Exclusive Disclosure Lists on Facebook (Perceptual Measure; N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	-.01(-.13)	-.02(-.35)	-.02(-.34)	-.02(-.33)
Age	.13(2.44)*	.13(2.55)*	.14(2.87)**	.15(2.98)**
Ethnicity	-.03(-.60)	-.03(-.62)	-.05(-.98)	-.05(-1.00)
Facebook Intensity (FI)		.08(1.49)	-.03(-.48)	-.02(-.27)
Facebook Literacy (L)		.02(.30)	.04(.73)	.03(.53)
Need for Connectivity (NC)			.29(5.46)***	.28(5.27)***
NC*FI				.08(1.45)
NC*L				-.02(-.44)
<i>adjusted R</i> ²	.01	.01	.08	.08
ΔR^2	.016	.007	.072***	.005
<i>R</i> ²	.016	.023	.095	.100
<i>F</i>	2.08	1.79	6.57***	5.19***

*** $p < .001$; ** $p < .01$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Hypothesis 3c. Hypothesis 3c predicted that the need for connectivity on SNSs negatively predicts blocking certain audiences from disclosure. A logistic regression analysis was conducted to test this relationship for users who have made posts at least once on Facebook ($n = 216$). With demographics, Facebook intensity, and Facebook literacy controlled for, individuals' need for connectivity did not significantly influence blocking certain audiences from disclosure, $\text{Exp B} = .97$, $B = -.03$, $p = .89$ (Table 22). Among control variables, Facebook literacy had a statistically significant influence on blocking certain audiences from disclosure in a way that the greater Facebook literacy was, the more likely people blocked audiences on Facebook, $\text{Exp B} = .1.62$, $B = .48$, $p < .05$.

This model that shows the influence of the need for connectivity on blocking certain audiences from disclosure was compared with another model that used participants' perceived frequency of blocking when making posts as the dependent variable (Table 23). A multiple linear regression revealed a statistically significant association between the need for connectivity and perceived frequency of blocking when making posts, but the direction of the relationship was opposite to what was predicted, $\beta = .31$, $p < .001$. The more individuals felt a need for connectivity, the more likely they perceived that they block others on Facebook. Therefore, the hypothesis was not supported. The need for connectivity explained 8% of the variance in the perceived frequency of blocking others when making posts, after controlling for demographics, Facebook intensity, and Facebook literacy, $F(6, 375) = 6.46$, $p < .001$.

Table 22. *The Influence of the Need for Connectivity on Blocking Certain Audiences from Disclosure on Facebook (Behavioral Measure; n = 216)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.80(.47)	-.68(.48)	-.68(.48)	-.67(.48)	.51
Age	.49(.38)	.53(.39)	.54(.39)	.62(.40)	1.86
Ethnicity	-.22(.39)	-.36(.40)	-.35(.40)	-.34(.40)	.70
Facebook Intensity (FI)		.43(.31)	.37(.33)	.41(.34)	1.51
Facebook Literacy (L)		.51(.22)*	.52(.22)*	.48(.22)*	1.62
Need for Connectivity(NC)			.08(.17)	-.03(.20)	.97
NC*FI				.37(.25)	1.45
NC*L				-.02(.18)	.98
Step significance (χ^2)	5.07	10.24**	.21	2.22	
Model significance (χ^2)	5.07	15.30**	15.52*	17.74*	
Nagelkerke R ²	.03	.09	.09	.11	

* $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 23. *The Influence of the Need for Connectivity on Blocking Certain Audiences from Disclosure on Facebook (Perceptual Measure: N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.02(.43)	.01(.25)	.01(.28)	.01(.27)
Age	.03(.50)	.04(.69)	.05(.95)	.05(.90)
Ethnicity	.07(1.45)	.07(1.32)	.05(1.03)	.05(.95)
Facebook Intensity (FI)		.10(1.79)	-.02(-.27)	-.01(-.25)
Facebook Literacy (L)		-.03(-.65)	-.01(-.23)	-.01(-.16)
Need for Connectivity (NC)			.30(5.70)***	.31(5.78)***
NC*FI				-.03(-.47)
NC*L				-.05(-.91)
<i>adjusted R</i> ²	-.00	.00	.08	.08
ΔR^2	.007	.008	.079***	.004
<i>R</i> ²	.007	.015	.094	.097
<i>F</i>	.84	1.15	6.46***	5.04***

*** $p < .001$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Hypothesis 3d. Hypothesis 3d predicted that the need for connectivity on SNSs negatively influences the creation of a restricted list and the size of a restricted list. First, a logistic analysis was conducted to test the relationship. When demographics, Facebook intensity, and Facebook literacy were controlled, there was not a statistically significant relationship between the need for connectivity and the creation of a restricted list, $\text{Exp B} = 1.15$, $B = .14$, $p = .27$ (Table 24). People's desire for connectivity did not lead to whether or not they created a list of individuals for regulating these individuals' access to public information only. Among control variables, ethnicity had a statistically significant influence on the creation of a restricted list; individuals other than Non-Hispanic Whites were more likely to create a restricted list.

A multiple linear regression was conducted with the size of a restricted list on Facebook as the dependent variable. Controlling for demographics, Facebook intensity, and Facebook literacy, the analysis did not reveal a statistically significant negative relationship between the need for connectivity and the size of a restricted list on Facebook, $\beta = .03$, $p = .79$ (Table 25). Therefore, the hypothesis was not supported. Among control variables, ethnicity had a statistically significant influence on the size of a restricted list on Facebook; individuals other than Non-Hispanic Whites were more likely to have a greater number of friends in their restricted lists on Facebook.

Table 24. *The Influence of the Need for Connectivity on the Creation of a Restricted List on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	-.32(.31)	-.27(.32)	-.27(.32)	-.27(.32)	.77
Age	.37(.29)	.40(.29)	.41(.29)	.46(.29)	1.58
Ethnicity	-.72(.30)*	-.75(.31)*	-.73(.31)*	-.71(.31)*	.49
Facebook Intensity (FI)		.21(.22)	.11(.23)	.15(.24)	1.16
Facebook Literacy (L)		.15(.15)	.16(.15)	.16(.15)	1.18
Need for Connectivity(NC)			.15(.12)	.14(.13)	1.15
NC*FI				.25(.18)	1.29
NC*L				-.16(.12)	.85
Step significance (χ^2)	8.66*	2.68	1.50	2.79	
Model significance (χ^2)	8.66*	11.34*	12.84*	15.63*	
Nagelkerke R ²	.04	.05	.06	.07	

* $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 25. *The Influence of the Need for Connectivity on the Size of a Restricted List on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.06(1.22)	.06(1.08)	.06(1.08)	.06(1.10)
Age	.06(1.12)	.06(1.21)	.06(1.22)	.07(1.41)
Ethnicity	.12(2.43)*	.12(2.38)*	.12(2.34)*	.12(2.24)*
Facebook Intensity (FI)		.05(1.01)	.04(.78)	.07(1.16)
Facebook Literacy (L)		-.00(-.03)	.00(.01)	-.02(-.29)
Need for Connectivity (NC)				.03(.47)
NC*FI				.13(2.35)*
NC*L				-.09(-1.56)
<i>adjusted R</i> ²	.01	.01	.01	.02
ΔR^2	.022	.003	.001	.016 ⁺
<i>R</i> ²	.022	.025	.025	.041
<i>F</i>	2.83*	1.91	1.62	1.98*

* $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

However, the analysis revealed a statistically significant relationship between the interaction term of the need for connectivity and Facebook intensity, and the size of a restricted list on Facebook. Thus, an additional analysis for this interaction effect was conducted to examine the direction and the size of the relationship between the need for connectivity and the size of a restricted list across different levels of Facebook intensity (Figure 4). Compared to when Facebook intensity level was moderate, when Facebook intensity level was low or high, the need for connectivity positively predicted the size of a restricted list.

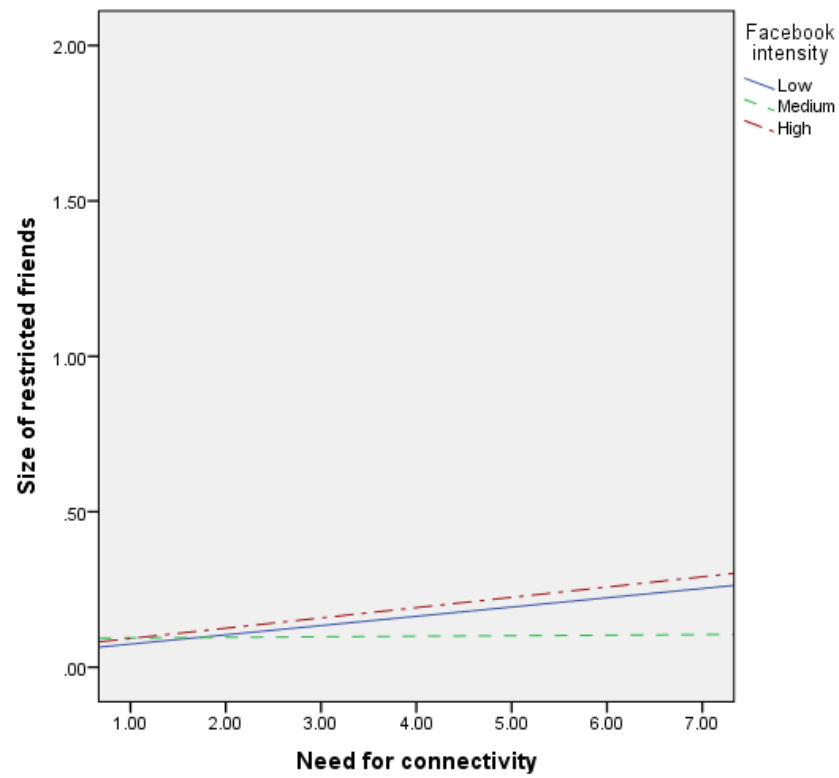
Need for Connectivity and the Coordination of Other-Generated Information

Boundaries (H4)

Hypothesis 4a. Hypothesis 4a predicted that the need for connectivity on SNSs negatively predicts the negotiation of other-generated information boundaries. A logistic regression analysis was conducted for monitoring tagging as the dependent variable. With demographics, Facebook intensity, and Facebook literacy controlled, the analysis did not reveal a statistically significant negative influence of individuals' need for connectivity on whether to monitor friends for tagging, $\text{Exp } B = 1.05$, $B = .05$, $p = .60$ (Table 26).

Individuals' desire for connectivity did not predict whether or not they turned on a privacy setting that alerts them about posts in which their Facebook friends tag them. Therefore, the hypothesis was not supported. Among control variables, age had a statistically significant influence on the negotiation of other-generated information boundaries; the older people were, the more likely that they monitored tagging on Facebook.

Figure 4. *The Relationship between the Need for Connectivity and the Size of a Restricted List across Different Levels of Facebook Intensity*



Hypothesis 4b. Hypothesis 4b predicted that the need for connectivity on SNSs negatively predicts breaking others' information boundaries. A multiple linear regression analysis was conducted for the dependent variable of breaking others' information boundaries. As opposed to the prediction, the analysis revealed a statistically significant positive relationship between the need for connectivity and breaking others' information boundaries, $\beta = .15$, $p < .01$. People's desire for connectivity did not influence the frequency with which they break information boundaries that others create. Therefore, the hypothesis was not supported. The need for connectivity explained 1.8% of variance in breaking others' information boundaries, after controlling for demographics, Facebook intensity, Facebook literacy, and the frequency with which one tags others into his/her posts, $F(7, 374) = 2.54$, $p < .05$ (Table 27).

Dialectical Tensions between Need for Privacy and Connectivity on the Coordination of Information Boundaries (RQ1)

Research question 1a. Research question 1a asked about the relationship between need for privacy and need for connectivity on SNSs. A Pearson correlation analysis revealed a significantly negative association between the need for privacy and need for connectivity on SNSs, $r(406) = -.18$, $p < .001$.

Research questions 1b and 1c. Research question 1b asked about the relationship between the need for privacy and the coordination of information boundaries for people with higher and lower needs for connectivity on SNSs. Research question 1c asked about the relationship between the need for connectivity and the coordination of information boundaries for people with higher and lower needs for privacy on SNSs.

Table 26. *The Influence of the Need for Connectivity on Monitoring Tagging on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	.09(.23)	.12(.24)	.12(.24)	.12(.24)	1.12
Age	.65(.22)**	.63(.22)**	.63(.22)**	.63(.22)**	1.89
Ethnicity	.07(.22)	.08(.22)	.07(.22)	.07(.22)	1.07
Facebook Intensity (FI)		-.16(.16)	-.19(.17)	-.19(.18)	.83
Facebook Literacy (L)		.01(.11)	.01(.11)	.01(.11)	1.01
Need for Connectivity (NC)			.05(.10)	.05(.10)	1.05
NC*FI				.00(.14)	1.00
NC*L				-.01(.09)	.99
Step significance (χ^2)	8.83*	.98	.23	.01	
Model significance (χ^2)	8.83*	9.81 ⁺	10.04	10.05	
Nagelkerke R ²	.03	.04	.04	.04	

** $p < .01$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 27. *The Influence of the Need for Connectivity on Breaking Others' Information Boundaries on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.04(.68)	-.01(-.09)	-.00(-.01)	-.00(-.02)
Age	-.04(-.81)	-.05(-1.00)	-.05(-.88)	-.05(-.92)
Ethnicity	-.01(-.26)	.00(.03)	-.01(-.16)	-.01(-.16)
Facebook Intensity (FI)		-.06(-.94)	-.10(-1.62)	-.10(-1.65)
Facebook Literacy (L)		.05(.93)	.06(1.15)	.07(1.21)
Frequency of tagging		.17(2.82)**	.15(2.62)**	.15(2.50)**
Need for Connectivity (NC)			.14(2.62)**	.15(2.66)**
NC*FI				-.03(-.53)
NC*L				-.00(-.05)
<i>adjusted R</i> ²	-.01	.01	.03	.02
ΔR^2	.020	.002	.000	.003
R^2	.020	.004	.001	.001
<i>F</i>	1.51	1.21	1.07	.97

** $p < .01$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Frequency of tagging: the frequency with which one tags others into his/her posts

In order to investigate these questions, several regression analyses were conducted with the need for privacy, the need for connectivity, and an interaction term of the needs for privacy and connectivity as independent variables, and each way to coordinate information boundaries as dependent variables (i.e., *the coordination of self-generated boundaries*: controlling posts on SNSs, creation of exclusive disclosure lists, using exclusive disclosure lists when making posts, blocking certain audiences from disclosure, creating a restricted lists, and the size of a restricted list; and *the coordination of other-generated boundaries*: monitoring tagging and breaking others' information boundaries).

In this section, only results of analyses that revealed a statistically significant ($p < .05$) interaction effect or an interaction that approaches a statistically significant level ($p < .10$) between the need for privacy and the need for connectivity are reported. Controlling for demographics, Facebook intensity, and Facebook literacy, there was a statistically significant and positive association between the interaction term of the need for privacy and the need for connectivity, and controlling posts on SNSs (Table 28).

To explain the interaction effect, the need for connectivity was used as a moderating variable, which was recoded into three levels of need for connectivity: low (-1 standard deviation from the mean), moderate, and high ($+1$ standard deviation from the mean). The association between the need for privacy and controlling posts on SNS was examined across these three levels of need for connectivity. When the degree of connectivity was high or medium, as individuals' need for privacy was greater the more likely that they controlled posts on Facebook (see Figure 5). On the other hand, when the degree of connectivity was low, as individuals' need for privacy became greater the less

likely that they controlled posts on SNSs. These findings mean that, in regulating the boundary permeability rule (i.e., controlling posts on Facebook), people attempt to balance the connectivity and privacy goals to a similar degree rather than pursuing one goal or the other.

Perceived Information Co-Ownership as Moderator in the Relationship between Need for Privacy and Connectivity, and the Coordination of Other-Generated Information Boundaries (H5)

Hypothesis 5a. Hypothesis 5a predicted that the positive relationship between the need for privacy on SNSs and the coordination of other-generated information boundaries is stronger when the degree of perceived information co-ownership is greater. In order to test this hypothesis, in the original statistical model for Hypothesis 4 (i.e., the positive relationship between the need for privacy and the coordination of other-generated information boundaries), perceived information co-ownership and an interaction term of the need for privacy and information co-ownership were included. First, a logistic regression analysis was conducted to examine the moderating influence of the perceived information co-ownership on the association between the need for privacy and monitoring tagging. This analysis did not reveal any statistically significant moderating relationship (Table 29). Second, a multiple linear regression analysis was conducted with breaking others' information boundaries as the dependent variable, and the moderating effect of perceived information co-ownership on the association between the need for privacy and breaking others' information boundaries was not found (Table 30).

Table 28. *Dialectical Tensions between Needs for Privacy and Connectivity on Controlling Posts on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.25(4.95)***	.23(4.74)***	.20(4.18)***	.20(4.24)***
Age	-.05(-1.01)	-.06(-1.28)	-.06(-1.30)	-.06(-1.31)
Ethnicity	-.04(-.71)	-.02(-.32)	-.02(-.42)	-.02(-.44)
Facebook Intensity (FI)		-.04(-.68)***	.04(.74)	.03(.52)
Facebook Literacy (L)		.22(4.33)	.18(3.65)***	.18(3.57)***
Need for Privacy (NP)			.24(4.81)***	.24(4.88)***
Need for Connectivity (NC)			-.03(-.65)	-.04(-.70)
NP*NC				.13(2.67)**
<i>adjusted R</i> ²	.06	.10	.15	.17
ΔR^2	.067***	.045***	.056***	.016**
<i>R</i> ²	.067	.112	.168	.183
<i>F</i>	9.04***	9.45***	10.73***	10.44***

*** $p < .001$; ** $p < .01$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Figure 5. *The Association between the Need for Privacy and Controlling Posts on Facebook across Different Levels of Need for Connectivity*

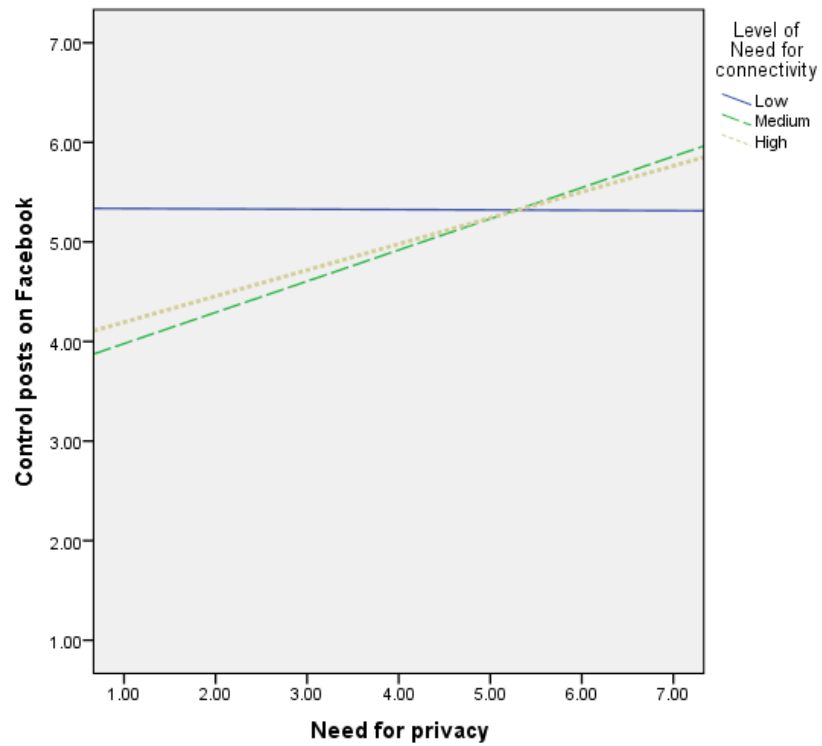


Table 29. *Perceived Information Co-ownership as Moderator in the Relationship between Need for Privacy and Monitoring Tagging on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	.07(.23)	.10(.24)	.01(.24)	.03(.25)	1.03
Age	.66(.22)	.65(.22)**	.66(.23)**	.66(.23)**	1.93
Ethnicity	.05(.22)	.06(.22)	.04(.23)	.05(.23)	1.05
Facebook Intensity (FI)		-.15(.16)	-.01(.17)	-.08(.18)	.92
Facebook Literacy (L)		-.00(.11)	-.03(.11)	-.03(.11)	.97
Need for Privacy(NP)			.18(.11)	.19(.12)	1.21
Information Co-ownership(IO)			.06(.10)	.06(.10)	1.06
NP*IO				.06(.08)	1.06
Step significance (χ^2)	9.12*	.90	3.38	.47	
Model significance (χ^2)	9.12*	10.12 ⁺	13.90*	14.37 ⁺	
Nagelkerke R ²	.03	.04	.05	.05	

** $p < .01$; + Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 30. *Perceived Information Co-ownership as Moderator in the Relationship Between the Need for Privacy and Breaking Others' Information Boundaries on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.04(.68)	.03(.54)	.01(.15)	.01(.23)
Age	-.04(-.81)	-.04(-.81)	-.04(-.71)	-.04(-.73)
Ethnicity	-.01(-.27)	-.10(-.19)	-.02(-.33)	-.02(-.33)
Facebook Intensity (FI)		.02(.38)	-.01(-.17)	-.01(-.10)
Facebook Literacy (L)		.05(1.01)	.06(1.02)	.06(1.05)
Need for Privacy (NP)			-.06(-1.00)	-.05(-.84)
Information Co-ownership(IO)			.12(2.12)*	.12(2.10)*
NP*IO				.05(.95)
<i>adjusted R</i> ²	-.005	-.006	.001	.001
ΔR^2	.003	.004	.012 ⁺	.002
<i>R</i> ²	.003	.007	.019	.022
<i>F</i>	.43	.54	1.06	1.04

* $p < .05$; + Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Hypothesis 5b. Hypothesis 5b predicted that the negative relationship between the need for connectivity on SNSs and the negotiation of other-generated information boundaries is weaker when the perceived information co-ownership is stronger. In order to test this hypothesis, in the original model for H4 (i.e., the negative relationship between the need for connectivity and the negotiation of other-generated information boundaries), perceived information co-ownership and an interaction term of the need for connectivity and information ownership were included. First, a logistic regression analysis was conducted to examine the moderating influence of the perceived information co-ownership on the association between the need for connectivity and monitoring tagging. This analysis did not reveal any statistically significant moderating relationship (Table 31).

Next, a multiple linear regression was conducted for breaking others' information boundaries as the dependent variable. Findings show that there was a statistically significant influence of the perceived information ownership on the relationship between the need for connectivity and breaking others' information boundaries (Table 32). As predicted, when the level of perceived information ownership was higher than lower, the relationship between the need for connectivity and breaking others' information boundaries was weaker. However, the association between the need for connectivity and breaking other's information boundaries was positive rather than negative for all levels of perceived information co-ownership. That is, when people perceived higher than lower information co-ownership, the degree to which the connectivity desire affected the tendency to break others' information boundaries was weaker (see Figure 6).

Table 31. *Perceived Information Co-ownership as Moderator in the Relationship between Need for Connectivity and Monitoring Tagging on Facebook (N = 412)*

	Model 1	Model 2	Model 3	Model 4	
	B (SE)	B(SE)	B(SE)	B(SE)	Exp(B)
Gender	.09(.23)	.12(.24)	.05(.24)	.06(.24)	1.06
Age	.65(.22)**	.63(.22)**	.65(.22)**	.64(.23)**	1.89
Ethnicity	.07(.22)	.08(.22)	.05(.22)	.05(.22)	1.05
Facebook Intensity (FI)		-.16(.16)	-.22(.18)	-.22(.18)	.81
Facebook Literacy (L)		.01(.11)	.00(.11)	.02(.11)	1.02
Need for Connectivity (NC)			.05(.10)	.06(.10)	1.06
Information Co-ownership(IO)			.12(.10)	.10(.10)	1.11
NC*IO				-.05(.08)	.95
Step significance (χ^2)	8.83*	.98	1.75	.40	
Model significance (χ^2)	8.83*	9.81 ⁺	11.56	11.97	
Nagelkerke R ²	.03	.04	.04	.04	

** $p < .01$; * $p < .05$; + Approaching significant, $p < .10$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Table 32. *Perceived Information Co-ownership as Moderator in the Relationship between the Need for Connectivity and Breaking Others' Information Boundaries on Facebook (N = 412)*

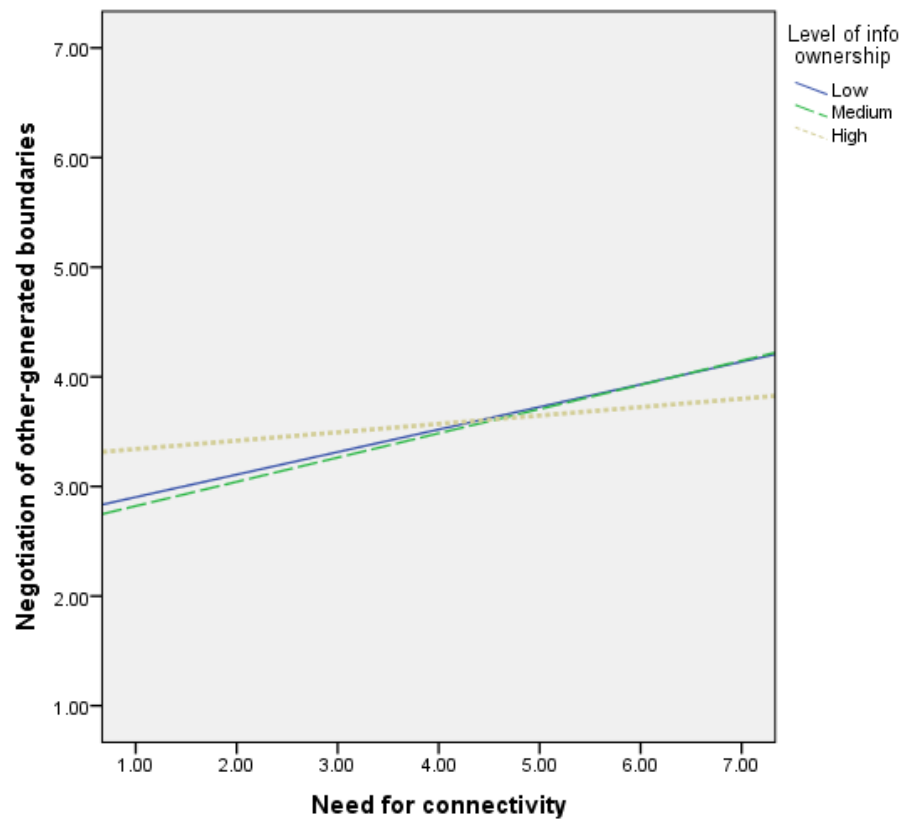
	Model 1	Model 2	Model 3	Model 4
	β (t)	β (t)	β (t)	β (t)
Gender	.04(.68)	.03(.54)	.00(.05)	.01(.16)
Age	-.04(-.81)	-.04(-.81)	-.03(-.59)	-.04(-.75)
Ethnicity	-.01(-.26)	-.10(-.19)	-.03(-.54)	-.03(-.54)
Facebook Intensity (FI)		.02(.38)	-.06(-.96)	-.05(-.96)
Facebook Literacy (L)		.05(1.01)	.06(1.13)	.08(1.46)
Need for Connectivity(NC)			.17(3.06)**	.18(3.30)**
Information Ownership(IO)			.11(2.11)*	.08(1.53)
NC*IO				-.11(-2.09)*
<i>adjusted R</i> ²	-.01	-.01	.02	.03
ΔR^2	.003	.004	.034**	.011*
<i>R</i> ²	.003	.007	.041	.052
<i>F</i>	.43	.55	2.27*	2.55*

** $p < .01$; * $p < .05$

Gender. 1: Male, 2: Female

Ethnicity. 1: White, Non-Hispanic, 2: Others

Figure 6. *The Association between the Need for Connectivity and the Negotiation of Other-Generated Information Boundaries across Different Levels of Information Ownership*



Influence of the Use of Privacy Features Affording *Self-Generated Boundary Coordination* on Disclosure Outcomes (H6 & H7)

Hypotheses 6 and 7 predicted that the coordination of self and other-generated information boundaries positively predicts the frequency, breadth, and depth of self-disclosure on SNSs (Hypotheses 6a and 7a, respectively). The relationship between the coordination of information boundaries and disclosure outcomes is mediated by the perceived sense of control (Hypothesis 6b) and the perceived sense of privacy violation (Hypothesis 7b).

In order to test H6 and H7, path analyses were conducted on AMOS 23, with all the possible paths being tested simultaneously.⁷ The mediation model was tested for both behavioral measures and perceptual measures of information boundary management and self-disclosures. The model that tested Hypothesis 6 included four exogenous variables for the coordination of self-generated information boundaries (controlling posts on SNSs, using exclusive disclosure lists,⁸ blocking certain audiences from disclosure, and the size of a restricted list⁹), one mediator (perceived sense of control), and three endogenous variables (frequency, breadth, and depth of self-disclosure) (Figures 7 & 8). For Hypothesis 7, there were two exogenous variable (monitoring tagging and breaking

⁷ Path analysis was used rather than structural equation modeling because behavioral measures of information boundary coordination patterns cannot be reflective of a latent construct.

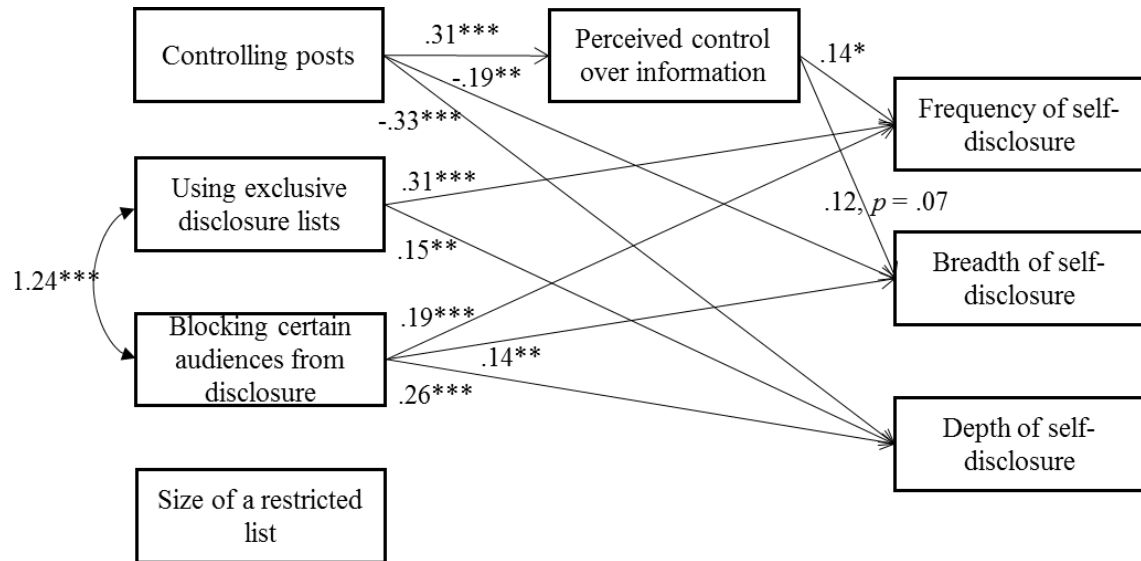
⁸ The analysis included participants who posted at least once on Facebook. Because the dependent variables of the analysis (self-disclosure frequency, breadth, and depth) are behavioral measures, the analysis included "using exclusive disclosure lists" which is relevant to activities of posting rather than "creating exclusive disclosure lists."

⁹ When testing H6 and H7, "the size of a restricted list" rather than "creating a restricted list" was used because the size of a restricted list better captures the degree to which individuals ponder who can have access to their information.

others' information boundaries), one mediator (perceived privacy violation), and three endogenous variables (frequency, breadth, and depth of self-disclosure) (Figures 9 & 10). For all models, statistical results report unstandardized regression weights and bias-corrected bootstrap CIs (Hayes, 2009). In the following, results of path analyses are reported.

Hypothesis 6 (perceptual measures). Hypothesis 6 was partially supported in that some of the direct positive associations between the self-generated boundary management patterns and self-disclosure outcomes were found (Figure 7). Here, for parsimony, only significant paths are reported. Findings show that individuals who controlled what to reveal on SNSs were less likely to perceive that they shared topics broadly ($b = -.19, p < .01$) and that they shared information about self in depth ($b = -.33, p < .001$). Individuals who used exclusive disclosure lists felt that they disclosed more frequently ($b = .31, p < .001$) and deeply ($b = .15, p < .01$). Individuals who blocked others when making posts perceived that they disclosed about self frequently ($b = .19, p < .001$), broadly ($b = .14, p < .01$), and deeply ($b = .26, p < .001$). A bias-corrected bootstrapping analysis indicated a statistically significant indirect effect of controlling posts on the frequency of self-disclosure via the perceived control over information (indirect effect coefficient = .04, bias-corrected 95% CI = [.01, .09]). People who were mindful of posting on Facebook tended to have an increased level of control over information, which led to more frequent self-disclosures.

Figure 7. A Path Model Showing the Relationships among the Coordination of Self-generated Information Boundaries, Perceived Sense of Control and Self-disclosure Outcomes (Perceptual Measure Model; $N = 412$)



—► Direct effect

*** Path significant at $p \leq .001$ (two-tailed)

** Path significant at $p \leq .01$ (two-tailed)

* Path significant at $p \leq .05$ (two-tailed)

Note. Only statistically significant paths are presented.

Hypothesis 6 (behavioral measures for self-disclosures). To test H6, the same path analysis (see Figure 8) was conducted for participants who made self-disclosures ($n = 135$), with the frequency, breadth, and depth of self-disclosure as the dependent variables. The analysis used behavioral measures of boundary management and self-disclosure measured via API except for controlling posts, sized of restricted list, and the frequency of self-disclosure (see measures section of chapter 3). For the behavioral measure of perceived control over information, participants responded to questionnaires (i.e., whether the post is appropriate to share, normal to share in this context, and suitable to post) shown with the post that they shared on Facebook. The measure was calculated by taking the average of perceived control over information for self-disclosures for each participant. The dependent variables of breadth and depth of self-disclosure were coded measures of participants' status updates on Facebook. The breadth of self-disclosure indicates the number of self-disclosure topic categories that the participants posted on Facebook. The depth of self-disclosure was averaged per participant across his/her collected self-disclosures.

The analysis revealed that the relationship between blocking others and the breadth of self-disclosure approached statistical significance ($b = 12, p = .08$). None of the other patterns of self-generated information boundary coordination influenced self-disclosure outcomes. Therefore, H6a was not supported. A bias-corrected bootstrapping analysis indicated a statistically significant indirect effect of blocking on the breadth of self-disclosure via the perceived control over information (indirect effect coefficient = $-.03$, bias-corrected 95% CI = $[-.079, -.004]$). Blocking reduced the perceived sense of control, which then positively predicted the breadth of self-disclosure. Another mediation

effect was found for the relationship between controlling posts and self-disclosure breadth via the perceived control over information (indirect effect coefficient = .01, bias-corrected 95% CI = [.002, .029]). People who were mindful of posting on Facebook had an increased level of control over information, which then positively predicted the breadth of self-disclosures. Next, using exclusive disclosure lists influenced the breadth of self-disclosure via the perceived sense of control, (indirect effect coefficient = .02, bias-corrected 95% CI = [.001, .048]). Disclosing through exclusive lists increased the level of control over information, which then positively influenced the breadth of self-disclosure. Because some of the predicted mediation effects of perceived control over information were found, Hypothesis 6b was partially supported.

Influence of the Use of Privacy Features Affording *Other-Generated Boundary Coordination* on Disclosure Outcomes (H7)

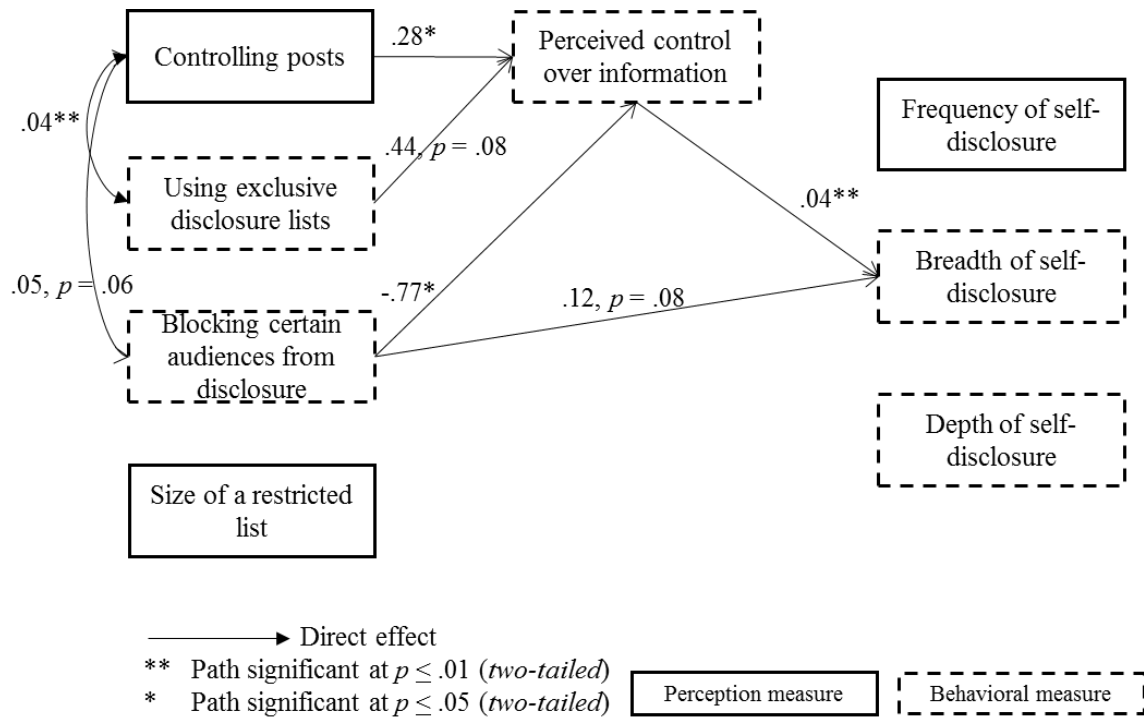
Hypothesis 7 (perceptual measures). To test Hypothesis 7, in the path model, all other-generated information boundary management patterns (i.e., monitoring tagging and breaking others' information boundaries) were included as exogenous variables, the perceived sense of privacy violation was a mediator, and the frequency, breadth, and depth of self-disclosure were endogenous variable (Figure 9).

Hypothesis 7a predicted that the negotiation of other-generated information boundaries negatively predicts frequency, breadth, and depth of self-disclosure. Findings show that relationship between breaking others' information boundaries and the frequency of self-disclosure approached a statistically positive relationship ($b = .10$, $p = .08$). The more frequently people broke information boundaries that others created on SNSs, the more likely they believed that they disclosed about self frequently. Individuals

who broke others' information boundaries also felt that they disclosed about self deeply ($b = .21, p < .001$). The direction of association between the negotiation of other-generated information boundaries and disclosure outcomes are opposite to what the original hypothesis proposed. Further, there was not any statistically significant association between monitoring tagging and the disclosure outcomes. Therefore, Hypothesis 7a was not supported.

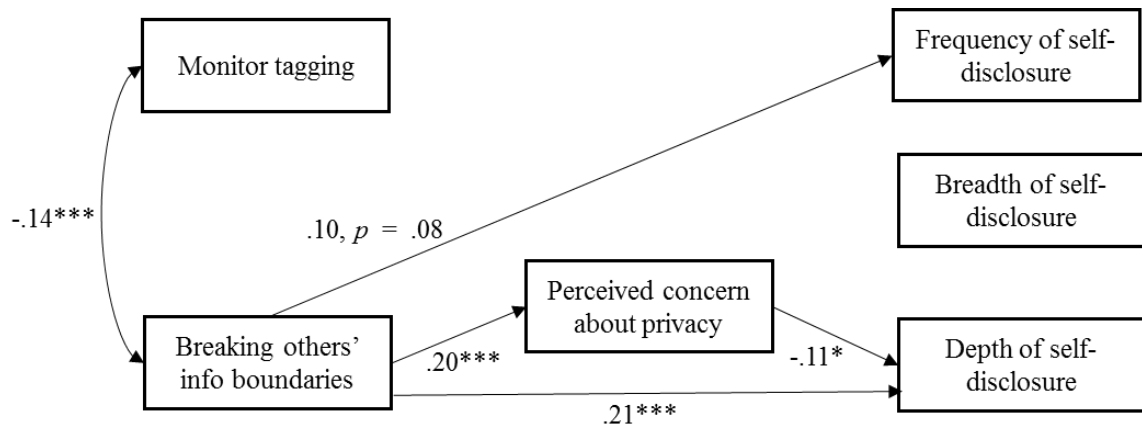
Hypothesis 7b predicted that the relationship between breaking others' information boundaries and disclosure outcomes is mediated by the perceived concern about privacy violation. An indirect effect of the perceived privacy violation was found for the association between breaking others' information boundaries and self-disclosure depth according to a bias-corrected bootstrapping analysis (indirect effect coefficient = $-.02$, bias-corrected 95% CI = $[-.057, -.002]$). Individuals who had broken others' information boundaries felt greater concerns about privacy violation, $b = .20, p < .001$. Also, the perceived concerns about privacy violation negatively predicted the depth of self-disclosure, $b = -.11, p < .05$. This means that, although coordinating others' information boundaries helps people disclose about self deeply, the extent to which such boundary coordination efforts impact the depth of self-disclosure is reduced by concerns about privacy violation caused by those efforts. Because the mediation was found for breaking others' information boundaries but not for monitoring tagging, the hypothesis was only partially supported.

Figure 8. A Path Model Showing the Relationships among the Coordination of Self-generated Information Boundaries, Perceived Sense of Control and Self-disclosure Outcomes (Behavioral Measure Model; $n = 135$)



Note. Only statistically significant paths are presented.

Figure 9. A Path Model Showing the Relationships among the Coordination of Other-generated Information Boundaries, Perceived Concern about Privacy and Self-disclosure Outcomes (Perceptual measure model; $N = 412$)



—————> Direct effect

*** Path significant at $p \leq .001$ (two-tailed)

* Path significant at $p \leq .05$ (two-tailed)

Note. Only statistically significant paths are presented.

Hypothesis 7 (behavioral measures; self-disclosures). H7 was also tested with coded measures of posts including self-disclosures for breadth and depth of shared post (i.e., behavioral measures) as the dependent variables (Figure 10). Findings of the path analysis show that individuals who frequently broke others' information boundaries were less likely to disclose about self in depth, $b = -.07, p < .01$. There was not any statistically significant association between monitoring tagging and any self-disclosure outcomes. Therefore, H7a was partially supported. For H7b, a bias-corrected bootstrapping analysis indicated a statistically significant indirect effect of breaking others' information boundaries on the frequency of self-disclosure via the perceived concerns about privacy violation (indirect effect coefficient = .05, bias-corrected 95% CI = [.01, .13]). First, individuals who had broken others' information boundaries felt greater concerns about privacy violation, $b = .24, p < .01$. Then, the perceived concerns about privacy violation positively predicted the frequency of self-disclosure, $b = .19, p < .05$. Because the direction of the path between the perceived concerns about privacy violation and the frequency of self-disclosure was opposite to what the hypothesis proposed, H7b was not supported.

Testing H6 and H7 in One Path Model

In order to present the associations between information boundary management (both for self and other-generated information boundaries) and self-disclosure outcomes as a whole, another path model was tested with behavioral measures of self-generated boundary management (using exclusive disclosure lists and blocking certain audiences from disclosure), perceived control over information, and self-disclosure outcomes (Figure 11).

Findings show that the positive relationship between blocking certain audiences from disclosure and the breadth of self-disclosure approached statistical significance (b

= .12, $p = .09$). Breaking others' information boundaries had a statistically significant negative association with the depth of self-disclosure, $b = -.07$, $p < .01$. These found associations support hypotheses.

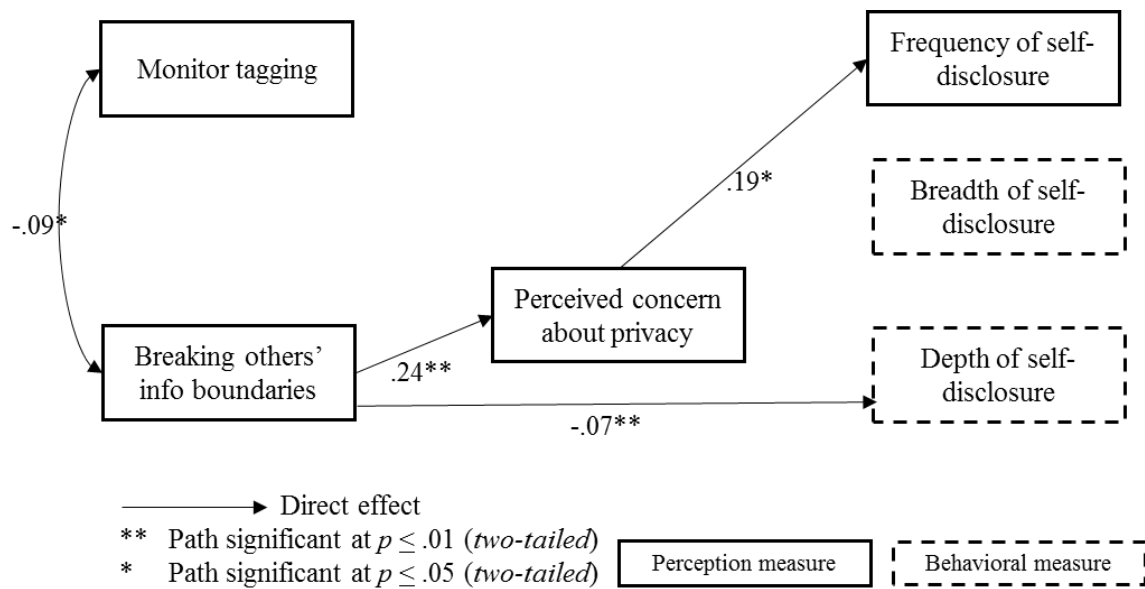
A bias-corrected bootstrapping analysis indicated a statistically significant indirect effect of controlling posts on the breadth of self-disclosure via the perceived control over information (indirect effect coefficient = .01, bias-corrected 95% CI = [.002, .029]). First, controlling posts positively influenced perceived control over information ($b = .28$, $p < .05$), which then positively predicted the breadth of self-disclosure ($b = .04$, $p < .01$).

Next, there was also a mediation effect of the perceived control over information on the association between controlling posts and the depth of self-disclosure and the effect approached a statistically significant level ($p = .052$, indirect effect coefficient = -.02, bias-corrected 95% CI = [-.048, .000]). More specifically, controlling posts positively influenced perceived control over information ($b = .28$, $p < .05$), which then negatively predicted the depth of self-disclosure ($b = -.06$, $p = .09$). This means that, although a mindful consideration of what to post increases the level of perceived information control, such perception reduces the degree to which people disclose about self deeply on Facebook.

There was also a mediation effect of the perceived control over information on the association between using exclusive disclosure lists and the breadth of self-disclosure (indirect effect coefficient = .02, bias-corrected 95% CI = [.001, .047]). Using exclusive disclosure lists positively influenced perceived control over information ($b = .44$, $p = .08$), which then positively predicted the breadth of self-disclosure ($b = .04$, $p < .01$).

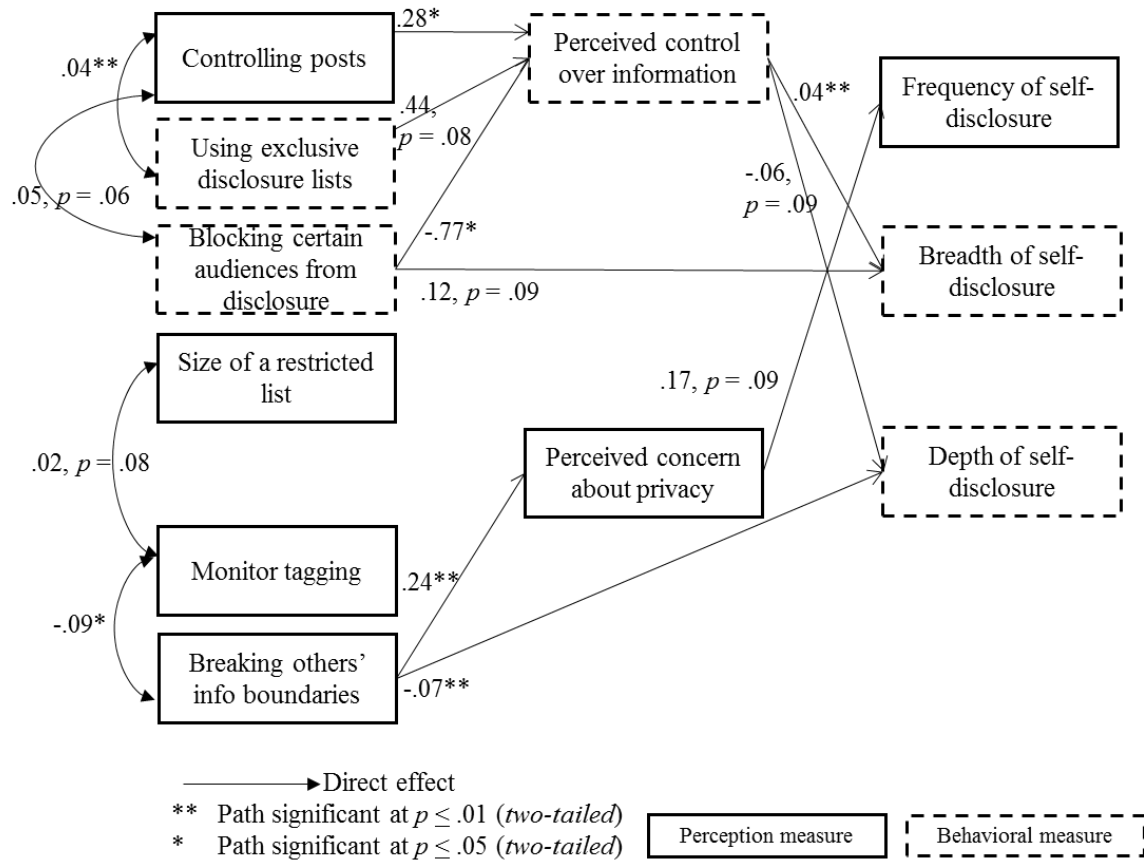
Another mediation effect of the perceived control over information on the association between blocking others and the breadth of self-disclosure was found (indirect effect coefficient = $-.03$, bias-corrected 95% CI = $[-.073, -.003]$). Blocking certain audiences negatively influenced perceived control over information ($b = -.77, p < .05$), which then positively predicted the breadth of self-disclosure ($b = .04, p < .01$).

Figure 10. A Path Model Showing the Relationships among the Coordination of Other-generated Information Boundaries, Perceived Concern about Privacy and Self-disclosure Outcomes (Behavioral Measure Model; $n = 135$)



Note. Only statistically significant paths are presented.

Figure 11. A Path Model Showing the Relationships among the Coordination of Self and Other-generated Information Boundaries, Perceived Control over Information, Perceived Concern about Privacy, and Self-disclosure outcomes (Behavioral Measure Model; $n = 135$)



Note. Only statistically significant paths are presented.

Chapter 5: Discussion

This chapter of the dissertation will summarize and elaborate on findings of this project. It will then discuss theoretical, methodological, and practical implications of those results. Finally, it will describe limitations of this work and directions for future work in this important area of study.

Summary of Findings

The procedure of sharing personal information in SNSs involves choices of not only what to reveal about self but also how and to whom. People tend to make these choices in accordance with what technology affords them to regulate information flow. In order to better understand the role of technology in shaping individuals' decisions for self-disclosure in SNSs, I focused on the characteristics of context; drawing on the technology affordance perspective, the study examined how the context affords the ways in which SNS users coordinate personal information boundaries from both perspectives of information owner and co-owner.

The goals of the current project were twofold. First, it examined how SNS users coordinate information boundaries when the users have full authority to create and manage personal information boundaries (i.e., self-generated information boundaries) or have partial authority to manage personal information boundaries (i.e., other-generated information boundaries). The coordination of self-generated information boundaries, through regulating personal information flow and target, will help the users meet their privacy needs. When coordinating other-generated information boundaries, the users may achieve privacy needs by regulating social tagging; however, this may also lead to concerns about losing connections. The ways in which the users' needs for privacy and connectivity differently influenced the coordination of self and other-generated

information boundaries were examined through Hypotheses 1 to 5 and the research questions.

As a second goal, this project investigated how the boundary coordination patterns influence the users' self-disclosure outcomes as a function of perceived sense of control (per the coordination of self-generated information boundaries) and perceived risks of privacy violation (per the coordination of other-generated information boundaries). Hypotheses 6 and 7 were proposed to examine these problems surrounding the relationship between the boundary coordination patterns and self-disclosure outcomes. Table 33 shows results of hypotheses and research questions.

The first problem (H1) that the project examined was the relationship between the need for privacy and the coordination of self-generated information boundaries. More specifically, employing CPM's rules for boundary coordination (Petronio, 2002), the hypothesis proposed that the greater the need for privacy, the more likely that people coordinate boundaries by controlling posts (permeability rule) (H1a), creating and using exclusive disclosure lists (ownership rule) (H1b), blocking audiences when posting (boundary ownership rule) (H1c), and creating a restricted list and reducing the size of restricted audiences (boundary linkage rule) (H1d). Among all these predictions, only H1a was supported. The need for privacy positively predicted controlling posts on SNSs. H1d was partially supported given the positive relationship approaching statistical significance between the need for privacy and both the creation of a restricted list on SNSs and the size of a restricted list in SNSs. SNS users who had a higher need for privacy had a greater tendency to create a restricted list and to include more individuals in the restricted list than others who had a lower need for privacy.

Table 33. *Results of Hypotheses/Research Questions*

Hypotheses and Research Questions		
H1a.	The need for privacy on SNSs positively predicts controlling posts on SNSs.	S
H1b.	The need for privacy on SNSs positively predicts the creation of exclusive disclosure lists (i.e., Facebook friend lists).	NS
H1c.	The need for privacy on SNSs positively predicts blocking of certain audiences from disclosure.	NS
H1d.	The need for privacy on SNSs positively influences the creation of restricted lists and the size of restricted audiences (i.e., restricted friends on Facebook).	PS
H2a.	The need for privacy on SNSs positively influences monitoring tagging.	PS
H2b.	The need for privacy on SNSs positively influences breaking other-generated information boundaries.	NS
H3a.	The need for connectivity on SNSs negatively predicts controlling posts on SNSs.	NS
H3b.	The need for connectivity on SNSs negatively predicts the creation of exclusive disclosure lists.	NS
H3c.	The need for connectivity on SNSs negatively predicts blocking of certain audiences from disclosure.	NS
H3d.	The need for connectivity on SNSs negatively predicts the creation of restricted lists and the size of restricted audiences (i.e., restricted friends on Facebook).	NS
H4a.	The need for connectivity on SNSs negatively predicts monitoring tagging.	NS
H4b.	The need for connectivity on SNSs negatively predicts breaking other-generated information boundaries.	NS
H5a.	The positive relationship between the need for privacy on SNSs and the coordination of other-generated information boundaries will be stronger when the degree of perceived information co-ownership is greater.	NS
H5b.	The negative relationship between the need for connectivity on SNSs and the coordination of other-generated information boundaries will be weaker when the perceived information co-ownership is greater.	S
H6a.	The use of privacy boundary management rules for self-generated information boundaries positively predicts the frequency, breadth, and depth of disclosure.	PS
H6b.	The relationship between the use of privacy boundary management rules for self-generated information boundaries and disclosure outcomes will be mediated by the sense of control.	PS
H7a.	The use of privacy boundary management rules for other-generated information boundaries negatively predicts the frequency, breadth, and depth of disclosure.	PS
H7b.	The relationship between the use of privacy boundary management rules for other-generated information boundaries and disclosure outcomes will be mediated by perceived risks of privacy violation.	NS
RQ1a.	What is the relationship between need for privacy and need for connectivity on SNSs?	
RQ1b.	What is the relationship between the need for privacy on SNSs and coordination of information boundaries for people with higher and lower needs for connectivity on SNSs?	
RQ1c.	What is the relationship between the need for connectivity on SNSs and coordination of information boundaries for people with higher and lower needs for privacy on SNSs?	

S: Supported**NS: Not supported****PS: Partially supported because of p value approaching a statistically significant level**

The project also examined whether the need for privacy positively predicts the coordination of other-generated information boundaries; such boundary coordination patterns included monitoring tagging (H2a) and breaking other-generated information boundaries (H2b). H2a was partially supported; the positive relationship between the need for privacy and monitoring tagging approached a statistically significant level. This means that people who pursue a greater need for privacy are more likely to follow up and monitor what others reveal about those people in SNSs.

Next, the negative influence of the need for connectivity on the coordination of self (H3a-d) and other-generated boundaries (H4a-b) was investigated and none of the hypotheses was supported; the need for connectivity did not negatively predict the coordination of self-generated information boundaries, nor the coordination of other-generated information boundaries.

A set of research questions were proposed to examine potential dialectical tensions between the need for privacy and the need for connectivity in SNSs. RQ1a asked what the relationship is between the need for privacy and the need for connectivity, and a negative relationship was found. RQ1b asked how the relationship between the need for privacy and the coordination of information boundaries differs across different levels of the need for connectivity. RQ1c asked how the relationship between the need for connectivity and the coordination of information boundaries differs across different levels of the need for privacy. Findings show that the association between the need for privacy and controlling posts was positive when the need for connectivity was at a medium or high level; but, the relationship turned into negative and marginal when the need for connectivity was low.

Hypothesis 5 examined how the relationship between needs for privacy and connectivity, and the coordination of other-generated information boundaries, is moderated by individuals' perceived information co-ownership. H5a predicted the moderation of the perceived information co-ownership on the association between the need for privacy and the coordination of self-generated information boundaries and the hypothesis was not supported. H5b predicted the moderation of the perceived information co-ownership on the association between the need for connectivity and the coordination of other-generated information boundaries and the hypothesis was partially supported. Findings of H5b show that the association between the need for connectivity and breaking other-generated information boundaries was positive, which was opposite to what the original hypothesis proposed. However, when the perceived information co-ownership was higher rather than lower, the positive relationship between the need for connectivity and breaking other-generated information boundaries became weaker, showing that the direction of association was turning towards the direction proposed by the hypothesis. Although the predicted relationship between the need for connectivity and breaking other-generated information boundary was not found, perceiving greater information co-ownership weakened the relationship between need for connectivity and breaking other-generated information boundaries.

H6 examined the influence of the coordination of self-generated information boundaries on self-disclosure outcomes (H6a) and examined whether this influence was mediated by perceived sense of control (H6b). The hypotheses were tested for both perceptual and behavioral measures of information boundary coordination and self-disclosure outcomes. Focusing on the results based on the model using behavioral

measures, H6a was not supported in that none of the self-generated boundary coordination patterns influenced the self-disclosure outcomes. H6b was partially supported in that perceived sense of control mediated the influence of controlling posts and using exclusive disclosure lists on the breadth of self-disclosure. There was also a mediation effect of the perceived sense of control on the association between blocking and self-disclosure breadth. However, the direction of relationship was not found as predicted by the hypothesis.

Hypothesis 7 examined the influence of the coordination of other-generated information boundaries on self-disclosure outcomes (H7a) and examined whether this influence is mediated by the perceived risks of privacy violation (H7b). H7a was partially supported in that only breaking other-generated information boundaries but not monitoring tagging negatively predicted the depth of self-disclosure. None of the other-generated information boundary coordination patterns influenced the frequency and breadth of self-disclosures. H7b was not supported; there was not any mediation of the perceived risks of privacy violation on the association between the coordination of other-generated information boundaries and self-disclosure outcomes.

Discussion for Hypotheses and Research Question

This section of the chapter will interpret findings of the current project regarding the association between needs for privacy and connectivity, the coordination of information boundaries, and self-disclosure outcomes in SNSs drawing on the perspective of technology affordance and communication privacy management theory (CPM), which have served as theoretical frameworks to conceptualize and operationalize major study variables.

Need for privacy and the coordination of information boundaries on SNSs

(H1-2). Findings of this project show that some of the relationship between the need for privacy and the coordination of self and other-generated information boundaries are statistically significant (or approaching statistically significant). The predictors of privacy protective behaviors in online contexts (in this study, the need for privacy) have been examined from diverse angles, including general concerns about privacy (Metzger, 2007; Wirtz & Lwin, 2009; Youn, 2009) or protection of personal identity and safety (Child et al., 2012). These studies emphasized concerns about privacy that people form when revealing personal information and showed how these concerns influenced various strategies to regulate personal information flow. For example, as a remedy to protect personal identity and safety, people chose to delete posts on blogs when they believed that the posts were revealing too much about themselves (Child et al., 2012). In addition, Metzger (2007) applied CPM to show information boundary management practices in online contexts when people anticipate privacy concerns—although her research did not find any significant associations between privacy concerns and privacy protective behaviors such as falsifying information or seeking information about privacy policy on a commercial website.

The privacy protective motivations examined in previous research may share conceptual background as to whether the motivations lead to reasonable privacy management practices, but the current project focuses more on the need for privacy in SNSs specifically. The need for privacy in SNSs may capture “the disposition to desire more or less privacy in various social situations” (Yao et al., 2007, p. 713), which may help better understand privacy strategies that people utilize with both individual and

relational goals, compared to concerns about privacy that may provoke defensive privacy protective behaviors even more.

Among the associations between the need for privacy and the three rules of information boundary coordination proposed by CPM (i.e., boundary permeability, ownership, and linkage rules), there was only a statistically significant relationship between the need for privacy and controlling posts (i.e., exercising the permeability rule). There was a positive association between the need for privacy, and both the creation of a restricted list and the number of restricted individuals (i.e., exercising the linkage rule), each of which was approaching a statistically significant level (H1d). The association between the need for privacy and the practices of boundary ownership rules (by creating and using exclusive disclosure lists or blocking others) was not found (H1b & H1c, respectively).

According to CPM, the boundary coordination rules are the ways in which an information discloser and a recipient regulate the flow of shared information. When one discloses a piece of information to another, one believes that s/he has the right to control information (ownership rule), set the range of recipients (permeability rule) and determine who else beyond him/her and the recipient has the right of access to the shared information (linkage rule). Once the information is disclosed, both the discloser (information owner) and the receiver (information recipient) may determine, negotiate, or change the boundary coordination rules. Therefore, the rule management system is flexible for the ways in which the information co-ownership is negotiated through the discloser-recipient interactions. This project drew on the concept of information boundary coordination as to how individuals make their own decisions for boundary

coordination about what to reveal in SNSs (permeability rule) to whom (ownership rule) and who to exclude (linkage rule).

With these concepts of boundary coordination on SNSs in mind, there can be several possible explanations for the differing associations between the privacy need and the application of boundary coordination rules in SNSs. First, a statistically non-significant relationship between the need for privacy and the regulation of boundary ownership rule, but a statistically significant relationship between the need for privacy and the regulation of boundary permeability rule (and the relationship between the need for privacy and the boundary linkage rule, which was approaching a statistically significant level) on SNSs may be associated with how SNSs afford the application of different boundary coordination rules prior to, during, or after disclosures. For example, controlling posts and regulating the access of selected audiences via a restricted list (i.e., putting selected individuals into a list on Facebook so that these individuals will not see one's post) may be strategies of boundary management that people consider prior to making a self-disclosure. On the other hand, people tend to employ privacy features such as exclusive disclosure lists or a block function while or after making self-disclosures. In the differing timelines for self-disclosure decisions, people may perceive different audiences and varying audience qualities or responses, which might be differently associated with their desire for privacy.

A volume of self-disclosure literature has shown that people's self-disclosure decisions involve their delicate considerations of self, other, and relationship (Afifi & Steuber, 2009) and that this assessment influences what to disclose or not. For example, the information that individuals decide not to reveal and that individuals decide to reveal

is different based on intimacy or sensitivity (Joinson, Paine, Buchanan, & Reips, 2007), motivation to reveal the information (Hollenbaugh & Ferris, 2013), or impact of disclosing the information on a close relationship (Derlega, Winstead, & Folk-Barron, 2000).

In the context of SNSs, people should determine the boundary coordination rules based on their own judgment of privacy risks for different audiences. The rule of permeability can be applicable to the decision on what to share in SNSs in general, helping people filter in information that they can disclose in SNSs and to general audiences in SNSs. The rule of ownership may represent people's attempts to differentiate the type of self-disclosure for diverse audiences. At the same time, the ownership rule may also indicate ways to build connections with chosen individuals out of the whole network. Thus, the ownership rule may apply to achieving both privacy and connectivity needs in SNSs whereas the permeability rule may better capture the privacy need than the connectivity need.

Another explanation for the varying associations between the need for privacy and the application of different boundary coordination rules may be that the use of some boundary coordination rules are more associated with the use of technology (i.e., privacy features) than are others in SNSs. For example, individuals who were more active in SNSs or who were more capable of managing privacy features in SNSs made better use of these features than their counterparts (Ellison et al., 2011). The results of this current project add further support to this finding. In this project, the use of boundary ownership rule (i.e., blocking others when making self-disclosures), but not the use of boundary permeability rule (i.e., controlling posts), had a statistically significant positive

association with Facebook intensity. This finding may indicate that the application of boundary ownership rule, although reflecting the privacy motivation at a moderate level, may better reflect the degree to which individuals are active in SNSs.

From the perspective of technology affordances (Gibson, 1979), these findings may shed light on how SNSs afford information control via different types of boundary coordination patterns. For the application of a permeability rule, SNSs afford opportunities to determine the extent to which certain pieces of information about self can be disclosed in SNSs. SNS users may also have choice over how they describe themselves using short hand or pseudonyms (via boundary permeability rule). In addition, individuals can determine who will have access to their information by granting information ownership to selected targets. In short, privacy may be afforded differently based on individual characteristics; more frequent use of SNSs will indicate more explorations of privacy features, which will then help people regulate information flow exclusively with selected targets. The lack of a statistically significant association between the need for privacy and the employment of information ownership rule (which involves the application of technology more directly than does the application of permeability rule), however, will need a more nuanced understanding of privacy affordances in SNSs.

As opposed to the need for privacy, the project proposed the need for connectivity as a predictor that negatively influences the coordination of information boundaries on SNSs. The next section will interpret results related to these hypothesized relationships.

Need for connectivity and the coordination of information boundaries on SNSs. This project claimed the need for privacy as a general motivator towards the

coordination of information boundaries whereas the need for connectivity may function to decrease motivations to coordinate information boundaries. People use SNSs with the goal to explore relationships by maintaining interpersonal connections (Cheung, Chiu, & Lee, 2011) or socializing (Quan-Haase & Young, 2010), and making self-disclosures to larger audiences promotes greater social capital (Ellison et al., 2007). Protecting privacy may come with concerns about avoiding sharing or restricting access of certain others to personal information (Livingston, 2008). Therefore, activities aimed at privacy protection can limit or reduce the possibility to promote connections. Drawing on this view, a negative relationship between the need for connectivity and the coordination of self-generated information boundaries was proposed; however, this is not what was generally found.

The non-significant relationship between the need for connectivity and the coordination of self-generated information boundaries, as opposed to a significant or partially significant positive relationship between the need for privacy and the self-generated information boundaries (a positive relationship between the need for privacy, and controlling posts, the creation of a restricted list and the size of a restricted list), may raise important discussions about how individuals' need for connectivity functions with the privacy need in the information boundary coordination in SNSs. That is, does the connectivity need present an opposite desire to the privacy need? As a result, the connectivity need suppresses the impact of privacy motivation following the decreased tendency to coordinate self-generated information boundaries.

The data of this project may provide an explanation for how the needs for privacy and connectivity function together in the coordination of self-generated information

boundaries. The discussion aims to answer this question based on how the needs for privacy and connectivity function in controlling posts in SNSs (i.e., permeability rule) through interpreting results of RQs. The RQ1 of the current study examined the relationship between the need for privacy and the need for connectivity and a negative association was found. This result may imply that the need for connectivity may be considered as the opposite desire to the need for privacy. That is, the more people desire for privacy in SNSs, the less likely that they pursue connections in SNSs. Findings from another research question (RQ1b), however, show an interaction between the need for privacy and the need for connectivity in the coordination of self-generated information boundaries; when the need for connectivity was higher rather than lower, people's need for privacy positively and more significantly predicted controlling posts.

This result from RQ1b requires a more delicate lens to understand the relationship between the need for connectivity and the need for privacy in SNSs; people may not pursue the privacy need over the connectivity need, and vice versa. Instead, people may tend to pursue and balance both needs for privacy and connectivity to a similar degree when these needs influence information boundary coordination. According to CPM, people possess fundamental needs for both openness and closedness and tend to balance these needs through regulating the degree of self-disclosures. This project empirically supports that the efforts to balance the dialectical tension are prominent prior to making self-disclosures (by the rule of permeability). However, the influence of the need for connectivity on the association between the need for privacy and the application of other rules (rules of ownership and linkage) was not found. Additional work will need to propose ways in which the use of technology (i.e., privacy features) is incorporated into

the conceptualization of information boundary coordination in SNSs and how people regulate the dialectical tension while coordinating information boundaries via the use of technology.

Another possible explanation for the non-significant association between the need for connectivity and the coordination of self-generated information boundaries may be that the need for connectivity in SNSs may explain the variance of being connected--without actively negotiating information boundaries on SNSs. The connectivity need may be pursued also by being covert observers of what others share on SNSs or providing comments to others' posts rather than adjusting privacy features to make self-disclosures.

For the association between the need for connectivity and the coordination of other-generated information boundaries (H4a&b), there was not a statistically significant negative relationship between the need for connectivity and monitoring tagging (H4a). Notably, a statistically significant positive association (rather than the hypothesized negative relationship) was found between the need for connectivity and breaking other-generated information boundaries (H4b). The positive relationship between the need for connectivity and breaking other-generated information boundaries may be attributed to the interactive nature of the other-generated information boundary coordination; the connectivity need leads to more chances of interactions, thus more chances to break other-generated information boundaries. In fact, in the statistical analysis for the hypothesis, the project found a statistically significant positive relationship between the frequency with which one tags others into his/her posts (a control variable in the analysis) and the coordination of other-generated information boundaries.

Although H4 was not supported for the relationship between the need for connectivity and the coordination of other-generated information boundaries, the project revealed the role of perceived information co-ownership in reducing the degree to which the connectivity desire affects the coordination of other-generated information boundaries. The following section will further describe the ways in which the perceived information co-ownership moderates the relationship between the need for connectivity and the coordination of other-generated information boundaries, using results from H5.

Perceived information co-ownership as a moderator in the relationship between needs for privacy and connectivity, and other-generated information boundaries. H5 proposed the moderation of perceived information co-ownership in the relationship between needs for privacy and connectivity, and the coordination of other-generated information boundaries. More specifically, it was proposed that the positive relationship between the need for privacy and the coordination of other-generated information boundaries will become stronger for people perceiving higher than lower information co-ownership. On the other hand, the negative relationship between the need for connectivity and the coordination of other-generated information boundaries will become weaker for people perceiving higher rather than lower information co-ownership.

H5a was not supported in that the association between the need for privacy and the coordination of other-generated information boundary did not change across different levels of perceived information co-ownership. H5b was partially supported. There was not a statistically significant negative relationship between the need for connectivity and the coordination of other-generated information boundaries. However, the hypothesis was supported on the moderating role of perceived information co-ownership in the

association between the need for connectivity and the coordination of other-generated information boundaries; the association was positive but smaller when the perceived information co-ownership was greater.

Analyzing these findings, this current project may help explain the ways in which SNS users decide to coordinate other-generated information boundaries based on the degree to which these users perceive co-ownership of information that others generate. Regardless of the degree of perceived information co-ownership, individuals' needs for connection resulted in coordinating boundaries that others created. However, the extent to which the need for connection led to such boundary coordination decreased as the perceived information co-ownership became greater.

The interactive function of the need for connectivity and the perceived information co-ownership on individuals' tendency to break other-generated boundaries shows how the two different needs come into play in negotiating information boundaries as information co-owners in SNSs. From the information co-owner's perspective, generating connections with others by letting them freely share information about the co-owner can be one goal of using SNSs whereas paying a close attention to negotiate other-generated information boundaries can be seen as a sign to forgo some useful connections (i.e., Brandtzæg, Luders, & Skjetne, 2010). For instance, prior studies show that SNS users considered the connectivity in SNSs as norms and breaking these norms may not be appropriate from the perspective of both the information owner and co-owner. Although people experienced face threats by posts that others make (Litt et al., 2014), they felt that it was not appropriate to untag from these posts because untagging may upset those others (Besmer & Lipford, 2010).

Another implication of this finding is that SNSs, as a venue affording visibility and association (Treem & Leonardi, 2012), facilitate opportunities of interactive communication whereas the venue may let people degrade or challenge the value of boundary coordination. Conceptually, the interaction effect of the connectivity need and the perceived information co-ownership on the coordination of other-generated information boundaries helps understand the relativity of SNSs affordance for diverse individuals who have different goals of using SNSs. Ricco and Stoffregen (1988), discussing the affordances of the environment for organisms' stance, emphasized that "affordances refer both to properties of environment and to the properties of organism: the same environment can have different affordances for different organisms" (p. 267). People assess the usefulness of technology by not using an absolute value but by using their own value system in terms of how the technology helps them meet a behavioral goal. In addition, affordance can be both positive and negative in a way that it opens up action possibilities but may challenge or constrain a behavior. In this study, the perceived information co-ownership can indicate individual tendencies to possess privacy per information that others share about self in SNSs. Individuals who perceive high information co-ownership may perceive constraints in determining individual boundaries in SNSs where association is highly afforded.

The perception of information co-ownership that CPM proposes is individuals' attempts to share and coordinate boundaries of information with others. In this project, the information co-ownership was used to understand the degree to which individuals feel authorized to negotiate boundaries of personal information that others create on SNSs. Therefore, the perceived information co-ownership was measured from the perspective of

information recipients as to how much these recipients are willing to negotiate information boundaries where the connectivity norms are developed and forced. This measurement has helped to advance an understanding of privacy affordances and constraints of SNSs; people have choice over information boundary management for privacy while having to selectively use privacy features in SNSs with the goal to maintain connectivity.

The ways in which people take advantage of various possibilities to manage personal information boundaries in SNSs as well as motivations for the management of information boundaries will need to be further examined in order to better assess affordances of privacy. The following section discusses how differently the coordination of self and other-generated boundaries affects self-disclosure outcomes.

Discussion on the Coordination of Information Boundaries and Self-Disclosure Outcomes

Hypothesis 6 proposed a positive association between the coordination of self-generated information boundaries and self-disclosure outcomes (i.e., frequency, breadth, and depth of self-disclosures) with the relationship mediated by perceived sense of control. This discussion will focus on results of the analysis that used behavioral measures of information boundary coordination and self-disclosures (Figure 8).

The analysis did not reveal any statistically significant relationship between the application of self-generated boundary coordination rules and self-disclosure outcomes (but there was a positive association between using exclusive disclosure lists and self-disclosure breadth that was approaching a statistically significant level). One possible explanation for the non-significant relationship between the application of self-generated

boundary coordination rules and self-disclosure may be attributed to the low variance of the self-disclosure outcomes such as self-disclosure breadth and depth. The breadth and depth of self-disclosure were coded with a dichotomous scale (1, low breadth or low depth and 2, high breadth or depth) in this project. Further, the majority of participants shared about self not so broadly ($M = 1.07$, $SD = .25$) and their self-disclosures were relatively non-intimate ($M = 1.17$, $SD = .38$). The reason for the low level of self-disclosure intimacy may be associated with the type of self-disclosures that participants posted in this project. For example, many of self-disclosures contained individuals' routines or personal tastes (e.g., "I made a bomb-ass chicken," "Hanging out with my babe," "I still love this show & movie."), which report their current statuses but may not always include information including personal feelings, thoughts or beliefs (for the definition of self-disclosure, see Chelune, 1979). This finding will need to be used to better understand the nature of self-disclosure in SNSs and develop more detailed scales to measure the depth of self-disclosure.

Another explanation for the non-significant findings may stem from difference in the nature of the measures between the application of boundary coordination rules and self-disclosure outcomes (especially between the permeability and linkage rules, and self-disclosure breadth and depth). First, the project used a perceptual measure for the boundary permeability rule but used a coded measure of self-disclosure breadth and depth as outcome variables. For the measure of the boundary permeability rule, participants were asked to report the degree to which they are careful when revealing personal information in SNSs. When responding to this questionnaire, the participants may have considered the personal information as what they consider personal whereas the

behavioral measure of self-disclosure was coded using an objective coding scheme. To better examine the association between the boundary permeability rule and self-disclosure outcomes, additional research will need to consider measuring the permeability rule from the perspective of participants and actual personal information collected for a study.

For the measure of the boundary linkage rule, referring to their own Facebook setting, participants reported whether they blocked any individual to their posts using a restricted list and if they did, how many individuals were included in the list. Creating a restricted list and the size of the list may reflect how much individuals are careful about who can or cannot have access to their personal information. However, these individuals may have used the restricted list not necessarily to coordinate boundaries for self-disclosures. Some individuals could have created a restricted list so that friends in this list have limited access to other types of personal information rather than to message posts including self-disclosures. As a way to improve the measure for the boundary linkage rule, additional studies will need to identify goals for creating a restricted list and examine how these goals influence self-disclosure outcomes.

Hypothesis 7 proposed a negative association between the coordination of other-generated information boundaries and self-disclosure outcomes (i.e., frequency, breadth, and depth of self-disclosures). The discussion will focus on results of an analysis that used behavioral measures of information boundary coordination and self-disclosure outcomes (Figure 10). Findings show that monitoring tagging (i.e., negotiation of other-generated information boundaries) did not predict self-disclosure outcomes whereas breaking other-generated information boundaries negatively predicted the depth of self-

disclosure. The latter finding supports the theoretical assumption of CPM on how experiencing boundary turbulence influences people's willingness to disclose personal information. Boundary turbulence caused by an unwanted individual having access to an individual's own information can signal risks of privacy violation by a third party.

Anticipating risks of privacy violation can increase concerns about not only privacy but also self-disclosure outcomes (Petronio, 2002). Although the mediation of perceived risks of privacy violation on the association between breaking other-generated information boundaries and disclosure outcomes was not found, the finding will advance an understanding of boundary coordination in SNSs as a factor that may not always lead to the perceived comfort of revealing in-depth personal information.

Methodological Contributions

There are a few methodological contributions that this project has made. First, the project provided conceptual and operational definitions of boundary coordination rules in SNSs specifically, using the CPM theoretical framework. Past research that used CPM proposed conceptualizations of boundary coordination rules in the contexts of online health information system in hospitals (Jin, 2012), e-commerce (Metzger, 2007) or blogs (Child et al., 2012). This project aimed to propose boundary coordination rules that can specifically apply to SNSs. In particular, the project focused on the role of context in shaping how people coordinate self-generated and other-generated information boundaries based on needs for privacy and connectivity. The definition of SNSs hints that the context of SNSs is presumed to encourage connections among others. At the same time, such context reinforces individualized efforts to protect privacy while connecting with others. Particularly when SNS users coordinate information boundaries that others

generate, the users may experience challenges in balancing both needs for privacy and connectivity.

The benefits of examining the associations between needs for privacy and connectivity, and information boundary coordination in SNSs are to anticipate affordances of boundary coordination in SNSs; although the privacy need may increase the tendency to coordinate information boundaries, the connectivity need may reduce such efforts. As the current project proposed through CPM, SNSs can supplement users to meet their goal to exercise the permeability, ownership, and linkage rules. This project, however, found that the connectivity need did not influence the application of any of these boundary coordination rules. In addition, the privacy need influenced the application of boundary coordination rules not always in the same fashion. For example, the need for privacy led to the consideration of what to share or not in SNSs (permeability rule) although it did not result in more delicate boundary coordination processes such as the regulation of information flow for different audiences (ownership rule). The different relationships between the need for privacy and each boundary coordination pattern can advance knowledge of how the boundary coordination should be conceptualized and operationalized in SNSs.

As another methodological contribution, in order to increase the accuracy in assessing boundary coordination patterns and self-disclosure outcomes, the project recruited a sample that actually used customized privacy feature in SNSs as well as measured the actual information boundary coordination patterns (i.e., creating and using exclusive disclosure lists, and blocking others) and self-disclosures (i.e., breadth and depth) through data retrieved from Facebook API. The use of behavioral measures helps

fill a gap in previous research that largely relied on perceptual measure for self-disclosures, which may not always reflect self-disclosures as defined in the literature. People may not understand the conceptual definition of self-disclosure only through a questionnaire that asks what information about self they share with others. For instance, when being asked to think about information about self, people can imagine various things that they believe to be relevant to themselves. Many of these circumstances can also involve information about others (e.g., posting that one's aunt had a baby shower should not be considered a self-disclosure). Using a behavioral measure of self-disclosure that is objectively coded using a coding scheme can contribute to more appropriately hypothesizing the relationship between actual boundary coordination patterns and self-disclosure outcomes.

Contributions to Theory

This study proposed components of boundary coordination that help conceptualize privacy affordance of SNSs. In conceptualizing technology affordances in organizational contexts, Rice et al. (2017) emphasizes that the affordance of technology (in their study, media within organizations) can be better explicated by showing how individuals adopt and customize the use of different media to accomplish tasks and relationships, rather than by designating a single affordance per media. This means that affordance is dynamic and relative to the extent of individual needs and goals within a particular context. Privacy management in SNSs requires a multi-step approach of privacy features to customize personal information flow. For example, this study used Petronio's principles of boundary coordination rules to examine how SNS users determine how much to share (permeability), to whom (ownership), and not with whom (linkage). The different privacy features of SNSs possess different functions for

managing information flow. The extent to which SNSs afford privacy can be verified only when examining how the users choose to use them.

In order to examine this issue, this study elaborated the relationships among the needs for privacy and connectivity, boundary coordination patterns, and self-disclosure outcomes; affordance indicates action possibilities embedded in features but varies in the relationship between individual users and technology. The relationship tends to be influenced by individual goals (here, needs for privacy and connectivity) within a particular context. For example, people's need for privacy may positively relate to the employment of privacy features. On the other hand, people's need for connectivity may negatively relate to the employment of privacy features.

The statistically non-significant findings for the relationships between the needs for both privacy and connectivity with boundary coordination patterns can be further elaborated to address factors that can contribute to conceptualizing privacy affordances of SNSs. For example, the regression model findings suggest factors that can help propose operational definitions of boundary coordination in SNSs: how and to what extent each boundary coordination rule is exercised along with variables such as how much users are familiar with the use of technology (Facebook literacy) and how intensively the users explore SNSs (Facebook intensity). In order to investigate the role of Facebook literacy and Facebook intensity in how SNS users apply boundary coordination rules, I added Facebook intensity and Facebook literacy to the regression models that examine the relationship between the needs for privacy and connectivity, and the coordination of information boundaries.

The data of this project found statistically significant associations between Facebook intensity and some of self-generated boundary coordination practices (in the model using behavioral measures) in an interesting way. First, Facebook intensity had a statistically significant negative relationship with using exclusive disclosure lists. Second, however, Facebook intensity had a statistically significant positive relationship with blocking certain audiences from disclosure. In both regression models, however, there was not any statistically significant association between the needs for privacy and connectivity, and either using exclusive disclosure lists or blocking. These findings may serve as grounds to ponder the functionality of privacy feature that reflects on the needs for privacy and connectivity, and intensity of using the technology in different ways.

For the lack of association between the need for privacy and employing boundary ownership rule, compared to the statistically significant association between Facebook intensity and boundary ownership rule, it is possible to suggest that the ways in which people employ boundary coordination rules is context dependent; the familiarity with technology can be a more important element to employ privacy features to regulate information flow than the privacy desire in SNSs. Because there was not any statistically significant interaction effect between the need for privacy and Facebook intensity, it is also hard to conclude that the need for privacy impacts boundary coordination according to levels of Facebook intensity. This finding may further support the view that the use of specific technology (here, privacy features of SNSs) does not always reflect the goal of technology (here, for protecting privacy) that the creators of technology may have aimed at. In additional research, it may be worthwhile to further examine the goal of employing the boundary ownership rule from the users' perspectives.

The different directions in the association between Facebook intensity and the use of those privacy features may need more nuanced interpretation of the affordance of privacy for boundary coordination, although they are conceptually considered as the same (i.e., exercising boundary ownership rule) in this project. For instance, in order for intensive Facebook users to reach out to more audiences, opening up about self superficially to a variety of audiences while giving up sharing in depth with selected audiences (by using exclusive disclosure lists) can be more cost effective to drive and maintain relationships with others. Compared to using exclusive disclosure lists, blocking may be more easily employed to selective disclosures for users who may post something on SNSs frequently; for each message, they can determine who should not see it and block anyone who should not have access to the message. Additional research may use this result to investigate the functionality of privacy features in boundary coordination as well as in the maintenance of connections with diverse others. Depending on the degree of SNS use, users may have preference on certain privacy feature, which may help draw characteristics of each user's network, shared content by such users, and the user's desire for boundary coordination; using this study's finding, among intensive Facebook users, using blocking but not relying on exclusive disclosure lists can show how much active SNS users value bridging social capital compared to bonding social capital (see Ellison et al., 2007).

In addition to examining the associations among needs for privacy and connectivity, and boundary coordination patterns, the study focused on creating a conceptual link between information boundary coordination and different self-disclosure outcomes (frequency, breadth, and depth); it investigated how coordinating information

boundaries from both perspectives engenders perceived sense of control and perceived privacy violation, respectively. Coordinating information boundaries as information co-owner especially can add an understanding of whether and how SNSs afford boundary coordination as information co-owner in that the action is driven by an experience of boundary turbulence and that such experience can lead to the perception of privacy violation. Given this theoretical link between the coordination of other-generated information boundaries and perceptions of privacy violation, it will be possible to explore constraints of technology for privacy management in SNSs context.

In pondering the linkage between boundary coordination and self-disclosure in SNSs, a technology affordance perspective is also helpful to explain whether SNSs (or SNSs' privacy features) afford privacy as a condition for diversifying the pattern of self-disclosures (in this project, disclosing about self frequently, broadly, and deeply). The findings of this project show a positive relationship between the use of exclusive disclosure lists and the breadth of self-disclosure, which was approaching a statistically significant level.

These findings reveal that running boundary coordination rules helps people employ information boundaries to distinguish topics for sharing with different audiences. However, given the proportion of participants who employ privacy features (there were 3.2% of participants who used friend lists to make posts), this result may not always imply that people apply privacy features to meet delicate self-disclosure goals. Instead, people may find ways to disclose in SNSs without using any privacy features. Past research shows that people can reduce the level of self-disclosure depth overall but choose to disclose using the lowest denominator considering the size and the diversity of

audiences (Hogan, 2010). Some results of this project also show that SNS users may choose to disclose about self on a superficial level without using privacy features for exclusive disclosures. In the analysis that examines the associations among controlling posts, perceived sense of control, and disclosure outcomes, controlling posts prior to revealing in SNSs led to the disclosure of more topics through perceived sense of control. This means that people are willing to disclose about self on broad topics through monitoring what they are about to post in SNSs; but, they may not need to or want to rely on privacy features to group audiences per disclosure topic.

When it comes to how controlling posts influence self-disclosure depth, although controlling posts resulted in a greater level of perceived control, perceiving more control reduced the depth of self-disclosure. In short, the ways in which controlling posts influence the breadth and depth of self-disclosures are different due to the role of perceived sense of control that plays in driving self-disclosure patterns. This finding will serve as foundation to further examine whether SNSs afford the disclosure of broad topics for a majority of audiences. On the other hand, efforts to filter what to post on SNSs may not help users feel the sense of control to the extent that they feel safe to make in-depth self-disclosures. Considering that SNSs are mostly considered a public venue, the decision of not making in-depth self-disclosures may be wise to avoid costs of revealing. CPM can be used to explain this lack of motivation to engage in in-depth self-disclosures in SNSs. According to CPM, people are trying to navigate dialectical tensions of openness and closedness in a way that they achieve both goals of being separate and being part of the relationship. In balancing this dialectical tension, perceived costs of revealing can play a significant role in deciding what information to reveal and to whom.

In offline contexts, exchanging in-depth self-disclosure is indispensable to strengthen the relationship because the sharing of information contributes to building trust and intimacy. In SNSs, not disclosing about self deeply may be a way to balance the dialectical tension with a sizable audience.

Drawing on theories of self-disclosure and relationship development, in-depth self-disclosures may contribute to forming bonding social capital (Ellison et al., 2007). However, given the characteristics of SNS contexts that afford quantity of connections, people may have limitations on what to reveal and what to see from another's post on SNSs. Previous research (Bazarova, 2012) shows that people have expectations on what is appropriate to share in a public context such as SNSs and the likability of individuals may decrease when these individuals reveal intimate information. In the current study, knowing the norms of self-disclosure may have influenced participants' lack of motivation toward in-depth self-disclosures.

Using this study's findings on the lack of self-disclosure in SNSs—which may be considered not helpful to strengthen bonding social capital in SNSs—it will be valuable to visit the associations between the perceived depth of self-disclosure and perceived social capital as well. Although the coded depth of self-disclosure was relatively low, the perceived depth of disclosures that participants in this study reported was above the average ($M = 4.93$, $SD = 1.64$). The perception of individuals' relatively intimate self-disclosures, even when they may not be perceived by others to be as intimate as the individuals expect, may better explain perceived social capital earned from self-disclosure.

Practical Implications of the Project

CPM has long been a theoretical framework to understand mechanisms of privacy boundary management in both offline and online contexts. Through providing operational definitions of boundary permeability, ownership, and linkage rules, this project found that people may not always employ information boundary coordination rules to meet their privacy needs. Rather, the opportunities to devise and exercise boundary coordination rules are limited by a number of aspects. For example, this study found that the use of some privacy features is more influenced by Facebook intensity or Facebook literacy than by privacy need. As past research proposes, SNS users may find that employing and managing privacy settings are complicated (Johnson et al., 2012) and that they eventually may not attempt to further explore those settings. The finding will benefit developers of SNSs in designing interfaces that can better inform available privacy settings and functions; some developers can design the interface that visualizes options of communication with diverse audiences. For example, rather than listing up group or friend list names at one side of the screen that users need to click on to initiate conversations, Facebook can promote such exclusive communication options through group images or photographs so that users better acknowledge there are various options of communication on Facebook.

Other findings of this project reveal that the use of privacy features to negotiate others' information boundaries increased rather than reduced concerns about privacy. This finding may require a better understanding of the functionality of privacy features in SNSs. That is, although privacy features are designed for users to feel safe when revealing personal information, people may have different perceptions of privacy features for how much using them is useful to secure both actual and psychological privacy. On

one hand, the level of discomfort caused by using some privacy features may decrease because the more individuals use them, the more likely it becomes that they understand the usefulness of technology. For users who are not feeling comfortable adjusting other-generated information boundaries, SNSs can provide them with regular activity logs that show their lack of activities to protect privacy. Potentially, a popular SNS such as Facebook can offer users statistics related to the use of specific privacy features so that the users may better understand norms of privacy protection on the site.

Limitations

As with all research, there are a few key limitations in this project. First, the project aimed to recruit participants who used various target categories for self-disclosure in SNSs such as all friends, friends in friend lists, or selected friends (by blocking others) to examine the association between boundary coordination patterns and self-disclosure outcomes. However, there were few SNS users (in this project, Facebook) that used privacy features (exclusive disclosure lists, restricted list, and blocking function) to make self-disclosures. Therefore, the sample used in this project will not be readily generalizable. As a solution to recruit more participants who used privacy features for making self-disclosures, the project sampled participants who used Facebook groups; it was determined that the use of private Facebook groups and exclusive disclosure lists were conceptually similar in that people categorize audiences using these features to disclose selectively across diverse audiences. After the attempt of this sampling that collected Facebook group users, however, it was found that these users used Facebook groups mostly for sharing information for various meetings or social gatherings that the group members regularly hold rather than for self-disclosures. This limitation is caused in

part because of the lack of data on user trends in using privacy features in Facebook, which was not available to the public while the study was being conducted.

A second limitation was relatively low intercoder reliability for coded posts. This limitation may be due to the lack of established coding schemes for self-disclosures in SNSs. In addition, the types of self-disclosure that this project captured were not always the same as what previous research examined. Further, the nature of self-disclosures that this study explored could have been different from what previous research has coded. Compared to past research that used self-disclosures that occurred in controlled experimental settings, this study used data that participants posted without receiving any directions on the content of posts. These data could be useful to identify characteristics of self-disclosures in SNSs. To create a generalizable coding scheme, I and the two coders went through several rounds of test coding. The procedure to finalize a coding scheme was meticulous, which also caused fatigue between coders. Ultimately, the intercoder reliability was acceptable, which is similar to a piece of experimental research that used the same definition of self-disclosure to what this study used (Bazrova & Choi, 2012).

Another limitation of this project is the use of perceptual measure of perceived privacy violation when examining how it mediates the association between the coordination of other-generated information boundaries and self-disclosure outcomes. The perceived privacy violation was not measured per the use of privacy features for boundary coordination. Therefore, there may be concerns about determining whether boundary coordination influences the privacy violation perception or whether the relationship is the inverse (how privacy violations influence boundary coordination). Although measuring the perception of privacy violation from using specific privacy

features may present a methodological challenge, future research can benefit from supplemental measures to better explain this relationship. For example, participants may respond to open-ended questions asking about how comfortable or safe they feel when using a certain feature and why. More qualitative findings will fill a gap here.

Lastly, using Facebook API offered benefits of collecting behavioral data; however, there were technical limitations in using the application. Even with several times of correcting technical errors in the application, the function of the application was not always stable across different browsers. Therefore, the final recruitment flyer came with detailed instructions that notified participants to use a certain browser when they filled out the survey and that showed how to use a certain browser (or how to install the browser if users do not have it). Such instruction could have helped collect data with minor errors. At the same time, it could also have limited the participation of some individuals who may not be willing or able to follow the instructions. Based on my own experience of working with the application designer, designing a survey application using API requires a series of discussions throughout designing and testing the application in order to reduce system errors as much as possible. It will be also helpful to reserve enough time for catching up and correcting errors to avoid concerns regarding the timeline to complete the survey.

Directions for Future Research

The results suggest several future research directions. First, in this project, one of the most noticeable results is that there were some positive relationships between the need for privacy and patterns of boundary coordination but that the need for connectivity did not predict any of the hypothesized relationships with boundary coordination patterns. As discussed above, the need for connectivity may not explain the variance in boundary

coordination because it is not posited as the opposite desire to the privacy need. Instead, the connectivity need may better explain activities that are relevant to building connections rather than privacy-protective behaviors. For example, this project shows that the need for connectivity positively influenced the negotiation of other-generated information boundaries (operationalized as breaking other-generated information boundaries) although it did not predict the use of any of privacy-protective features. The negotiation of other-generated information boundaries represents activities that individuals engage through interactive tagging or commenting. It thus may reflect the connectivity desire more closely than the privacy desire. In order to further examine the ways in which users' privacy and connectivity needs impact boundary coordination patterns, future research may need to conceptualize boundary coordination in ways that consider needs for privacy and connectivity.

Second, future research may benefit from the study reported here by finding ways to re-conceptualize self-disclosure in SNSs. This project proposed that reporting individuals' routines or tastes is a type of self-disclosure in SNSs, because those self-disclosures that are relatively not intimate tend to be common. In fact, such self-disclosures that include one's taste or routine were much more common than the self-disclosures the traditional definition of self-disclosure proposes (personal information including feelings, experiences, or thoughts). The majority of posts that people tend to share with others can be further categorized for coding self-disclosures to better understand the relationship between the type of self-disclosures and target audiences. Thus, future research about disclosure online may need to consider the best way to conceptualize self-disclosure—and may very well need to consider it more broadly. For

example, self-disclosure can be conceptualized differently across SNS contexts in that different SNSs afford different sizes or types of audiences, which then impact types of contents that individuals can disclose. In this study, it was found that a majority of users tend to share about what they had done with close others (e.g., family or friends). This study tried to stick to the original definition of self-disclosure when coding posts although future research may use some flexibility in advancing coding scheme of self-disclosure in SNSs; using examples from this research, speaking about close others to general audiences might be considered as a type of self-disclosure in SNSs given that it is part of reporting one's experiences in relationships.

As an effort to capture more self-disclosures, future research may also need to find other posts rather than status update to better examine self-disclosure patterns in SNSs. In the current project, although comments to posts (in Facebook, comments) were not collected to capture self-disclosure, it is possible that SNS users disclose about self through commenting even more easily; the literature on self-disclosure confirms that self-disclosure can occur not only by voluntarily revealing about self but also by reciprocating another's disclosure (i.e., Cozby, 1972).

Next, future research that uses CPM as a theoretical framework to examine the relationship between boundary coordination and self-disclosure outcomes can consider including information other than self-disclosures as outcomes of boundary coordination. CPM provides rules of boundary coordination for individuals' private information. Private information can include not only self-disclosures but also other types of information that individuals consider private. For example, in this study, revealing information about others may not be a self-disclosure whereas such information can be

considered private. Related to this approach, the ways in which research describes “private” information in SNSs should need careful considerations of what is private in semi-open online context such as SNSs.

As a study that examines the process of boundary coordination for self-disclosure, future research can use the current study to further examine the affordance of privacy as a condition for various communication patterns in SNSs. Prior research has proposed that association is one affordance of SNSs and that such an affordance may be facilitated through increased visibility (Leonardi, Huysman, & Steinfield, 2013; Treem & Leonardi, 2012). Diverse patterns of communication including self-disclosure are important means to maintain and extend associations although the process by which the communication is enabled in SNSs has yet to be examined. As this project found, the coordination of other-generated information boundaries is a way to regulate personal information flow whereas it may cause unintended discomfort in disclosing about self in depth. This finding may be used to examine the affordance of privacy and how this privacy affordance is associated with the ways in which people are connecting to others. For instance, additional qualitative research may supplement the current study’s findings by investigating dialectical tensions that people aim to manage in SNSs; in SNSs, it may be safe to limit the level of self-disclosure but to diversify topics of self-disclosure not only for privacy but also for a wide variety of connections.

Conclusion

Traditional self-disclosure research argued that control over personal information flow is a way to protect self, other, and relationship. As communication with others beyond one’s close network becomes more convenient, easier, or faster through SNSs, there have been concerns about individuals’ ability to control personal information. In

SNSs, people should employ sophisticated privacy management practices to regulate personal information flow. Determining the boundary of information for selected audiences creates challenges both in terms of how people determine and categorize target audiences and how people judge an appropriate self-disclosure with sizeable audiences (i.e., Vitak, 2012; Vitak, Blasiola, Patil, & Litt, 2015). Context collapse (i.e., multiple audiences on SNSs contexts being perceived as a homogeneous group) not only blurs the boundary between personal and public spaces but also challenges the characterization of different audiences. Further, the context collapse may generate norms of interactions with diverse audiences rather than being selective to interact invisibly.

An opinion such as “privacy is no longer the norm” deserves attention to ponder social benefits that softening individuals’ information boundaries can offer in SNSs. However, it is also important to assess the functionality of SNSs that enable customized privacy management to the extent that people have control over information as well as feel comfortable sharing information. The current project aimed at exploring information boundary management in SNSs, first, focusing on examining the process by which SNS users employ boundary coordination practices through exercising boundary permeability, ownership, and linkage rules. Then, the study investigated how the boundary coordination practices lead to self-disclosure outcomes.

In exploring the former question, the study chose to investigate the associations between needs for privacy and connectivity, and boundary coordination patterns in order to investigate how the privacy need influences the boundary coordination in comparison to the connectivity need that is promoted and enforced in SNSs. The study found that the privacy need increases efforts to exercise the permeability rule but not the ownership and

linkage rules; people filtered information for SNSs in general but not through using privacy features. Exercising the permeability rule for general audiences may be a cost effective way to achieve bridging social capital while people are reducing efforts to customize self-disclosures for different audiences. In using the boundary permeability rule, people were also found to balance opposing forces of privacy and connectivity needs. This finding confirms CPM's theoretical assumption that people tend to manage dialectical tensions of openness and closedness in SNSs. The lack of association between privacy needs and the application of ownership and linkage rules that involve the use of privacy features should indicate the need for conceptualization of technology not only with the common goal of using it but also with individual abilities to use the technology (e.g., in this study, Facebook literacy and Facebook intensity)

For the second question of this study, the project found that the use of one ownership rule (i.e., using exclusive disclosure lists) helped SNS users disclose about self broadly through perceived sense of control. The use of another ownership rule (i.e., blocking) led to the self-disclosure breadth too, but the impact of blocking on the self-disclosure breadth was weakened by the reduced level of perceived control. This finding suggests that SNSs may not always provide conditions for self-disclosure that can afford information sharing even when individuals actively manage privacy features for self-disclosures. There is not any theoretical framework in self-disclosure research to explain the contrasting effects of information ownership rules on self-disclosure outcomes. However, the characteristic of each boundary coordination pattern can add some explanations for this finding via the theory of regulatory focus (Crowe & Higgins, 1997). Blocking, as an activity that limits the access of certain audiences, may involve a

motivation to avoid privacy risks (i.e., prevention focus). Using exclusive disclosure lists may better represent a motivation to share selectively and to protect privacy (i.e., promotion focus).

The findings of this project add additional light on the privacy paradox. The privacy paradox has been found in a variety of online contexts which provide room for examining the gap between individuals' privacy needs and the extent to which they manage privacy in online context. From this study, future research may gain a sense of the privacy paradox in regard to how technology affords privacy in a way that the use of technology provides the people with comfort of sharing.

Appendix – Survey Instrument

Please Log into your Facebook account on Google Chrome Browser. We'd recommend you load your Facebook next to the survey tab rather than opening it on a separate window.



While participating in this survey, please keep BOTH this survey and your Facebook account open to answer all the survey questions. Click the button below to start the survey. Please type in your RU ID so that the researcher can forward the credit appropriately to your professor. _____

Please indicate your level of agreement with the following statements.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- I'd rather not talk about myself on Facebook.
- I prefer others know little about me on Facebook.
- There are many things that I consider too personal to share with others on Facebook.
- I'd prefer others have limited access to my information on Facebook.

Please indicate your level of agreement with the following statements.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- I try hard to do things that other people expect me to do on Facebook.
- I need to feel that there are people on Facebook I can turn to in times of need.
- I want other people to accept me on Facebook.
- I have a strong need to belong on Facebook.
- It bothers me a great deal when I am not included in other people's plans on Facebook.

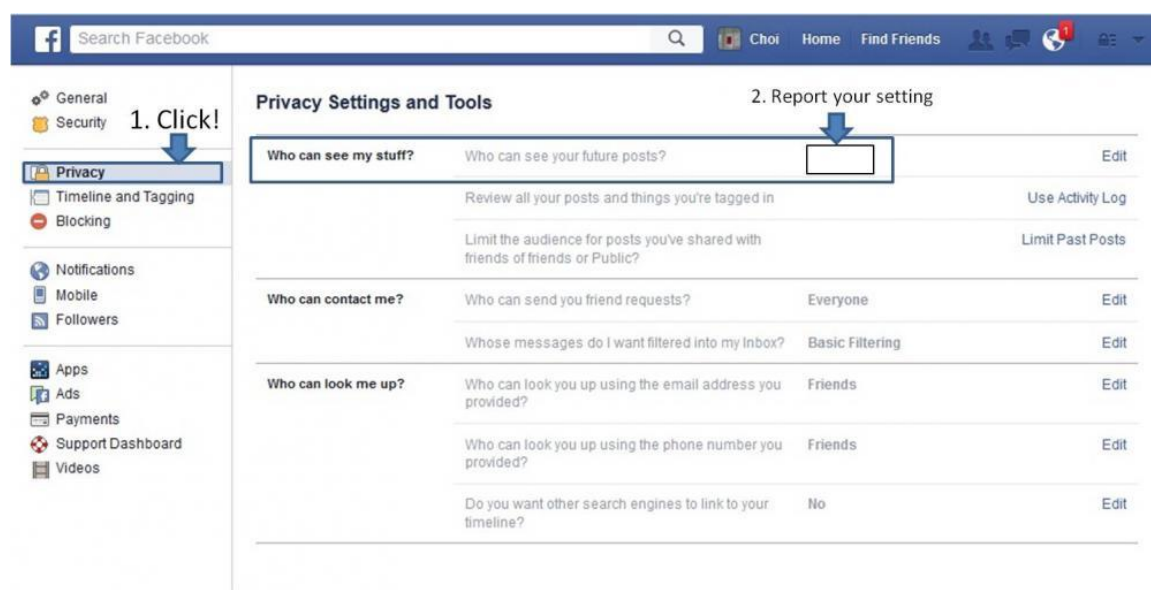
Please indicate your level of agreement with the following statements.

Strongly Disagree Disagree Somewhat Disagree Neither Agree nor Disagree Somewhat Agree Agree Strongly Agree

 O O O O O O O

- I feel that I need to control information about myself that others post on Facebook.
- I feel that I own information about myself regardless of whether others or myself post that information on Facebook.
- I feel that I own information about myself revealed by others on Facebook.
- I feel I have the authority to determine what information about myself should be posted on Facebook.

Now go to your Facebook timeline and follow the instruction shown in the image below. Refer to the following image to find and report your own privacy setting on Facebook.



Please report your privacy setting for "Who can see your future posts?"

Public Friends Only me Custom Others: Please report your setting.

 O O O O O

For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.

Yes, I definitely recall seeing this item.

I vaguely recall seeing this item.

No, I did not see this item.

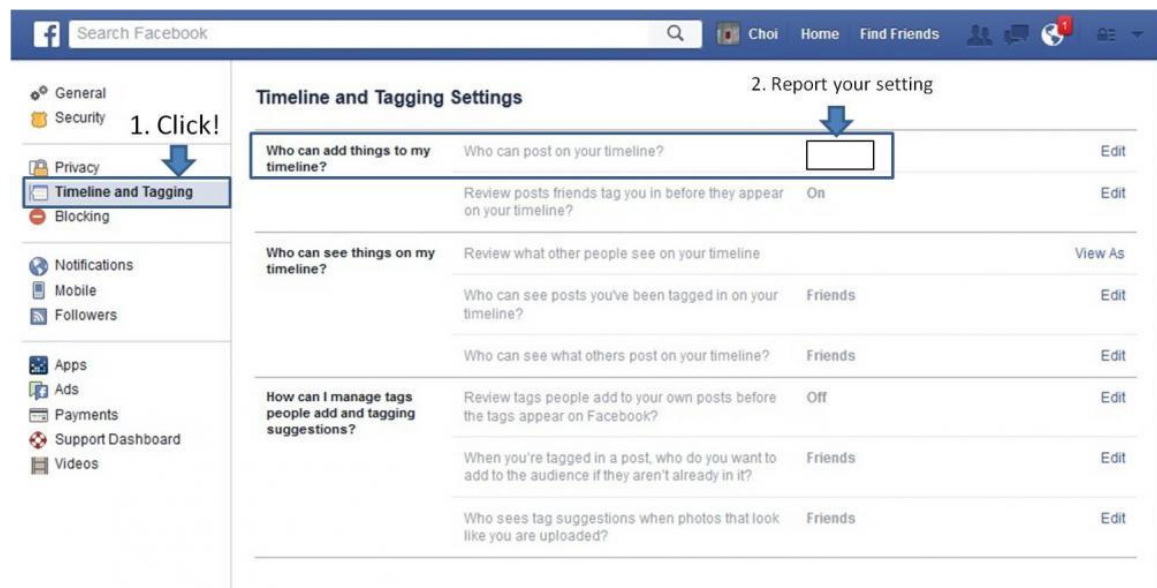
0 0 0

Please answer this question based on the feature or setting shown.

How much effort do you feel it takes to customize this feature or setting effectively?

Not at all Little A little Neutral Somewhat Much A great deal

Now, click "Timeline and Tagging" on the left side of your Facebook interface. Refer to the following image to find and report your own privacy setting on Facebook.



Please report your privacy setting for, "Who can post on your timeline?"

Friends Only me

0 0

For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.

Yes, I definitely recall seeing this item. I vaguely recall seeing this item. No, I did not see this item.

O

O

O

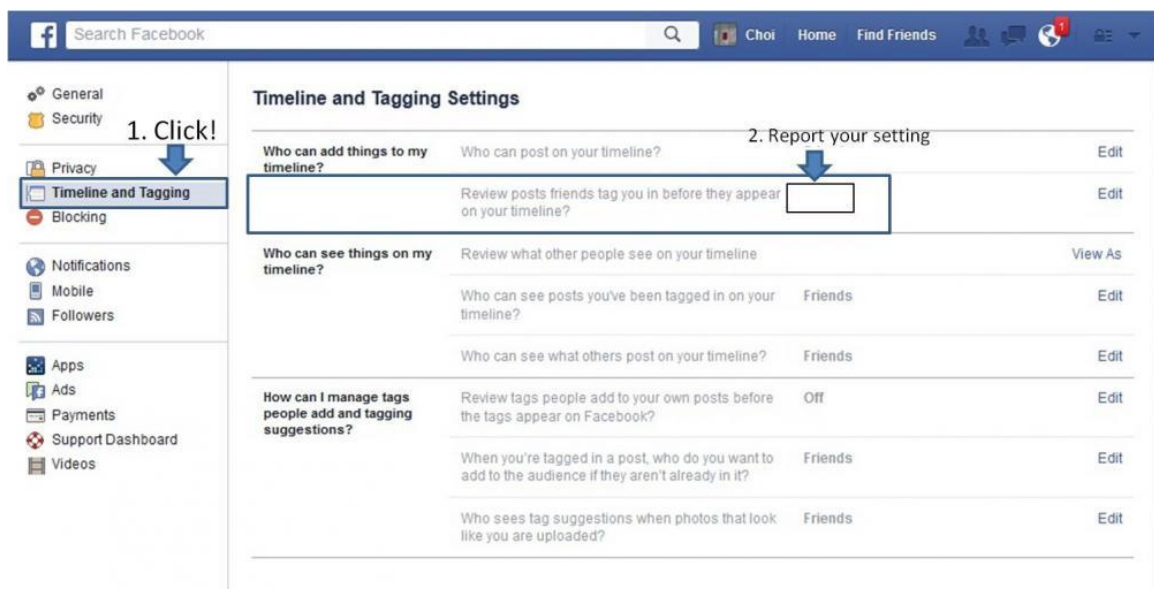
Please answer this question based on the feature or setting shown.

How much effort do you feel it takes to customize this feature or setting effectively?

Not at all Little A little Neutral Somewhat Much A great deal

O O O O O O O

Please stay on "Timeline and Tagging". Then, referring to the following image, find and report your own privacy setting on Facebook.



Please report your privacy setting for, "Review posts friends tag you in before they appear on your timeline?"

On Off

O O

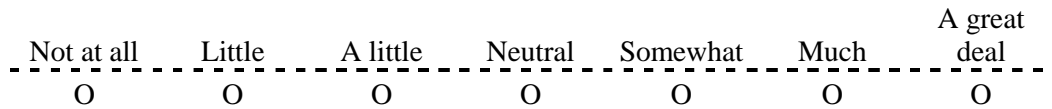
For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.

Yes, I definitely recall seeing this item. I vaguely recall seeing this item. No, I did not see this item.

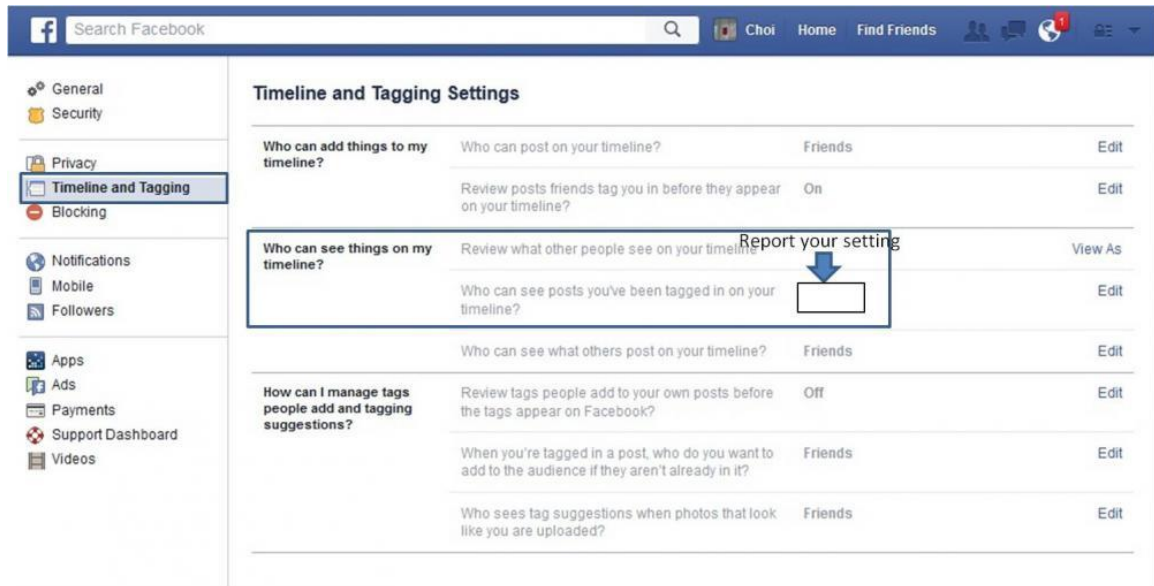
O O O

Please answer this question based on the feature or setting shown.

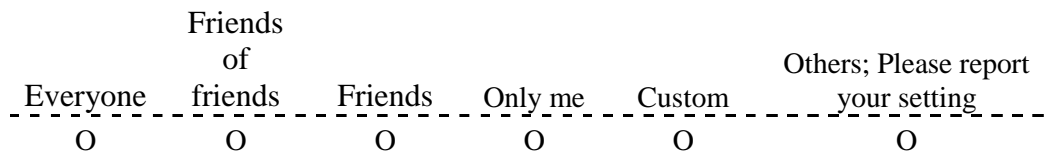
How much effort do you feel it takes to customize this feature or setting effectively?



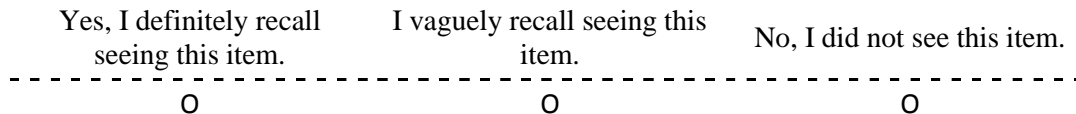
Please stay on "Timeline and Tagging". Then, referring to the following image, find and report your own privacy setting on Facebook.



Please report your privacy setting for, "Who can see posts you've been tagged in on your timeline?"



For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.



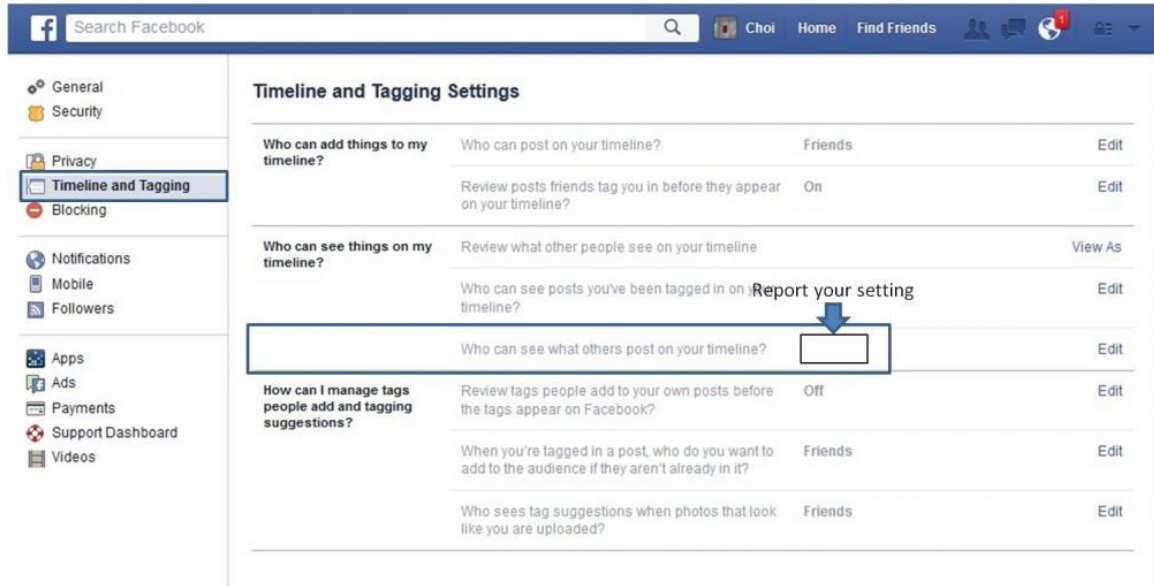
Please answer this question based on the feature or setting shown.

How much effort do you feel it takes to customize this feature or setting effectively?

Not at all Little A little Neutral Somewhat Much A great deal

O O O O O O O

Please stay on "Timeline and Tagging". Then, referring to the following image, find and report your own privacy setting on Facebook.



Please report your privacy setting for, "Who can see what others post on your timeline?"

Friends of Others; Please report

Everyone friends Friends Only me Custom your setting

O O O O O O O

For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.

Yes, I definitely recall seeing this item. I vaguely recall seeing this item. No, I did not see this item.

O O O

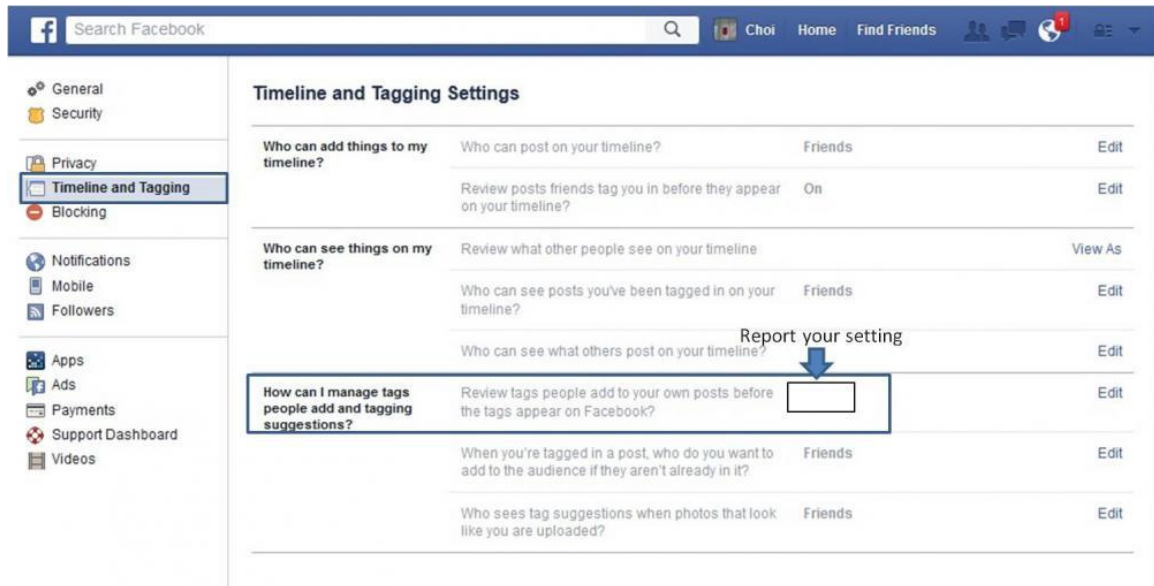
Please answer this question based on the feature or setting shown.

How much effort do you feel it takes to customize this feature or setting effectively?

Not at all Little A little Neutral Somewhat Much A great deal

O O O O O O O

Please stay on "Timeline and Tagging". Then, referring to the following image, find and report your own privacy setting on Facebook.



Please report your privacy setting for, "Review tags people add to your own posts before the tags appear on Facebook?"

----- On ----- Off -----
 O O

For the feature or setting shown, please indicate whether you remember noticing it prior to participating in this survey.

Yes, I definitely recall seeing this item. I vaguely recall seeing this item. No, I did not see this item.
 ----- O ----- O ----- O -----

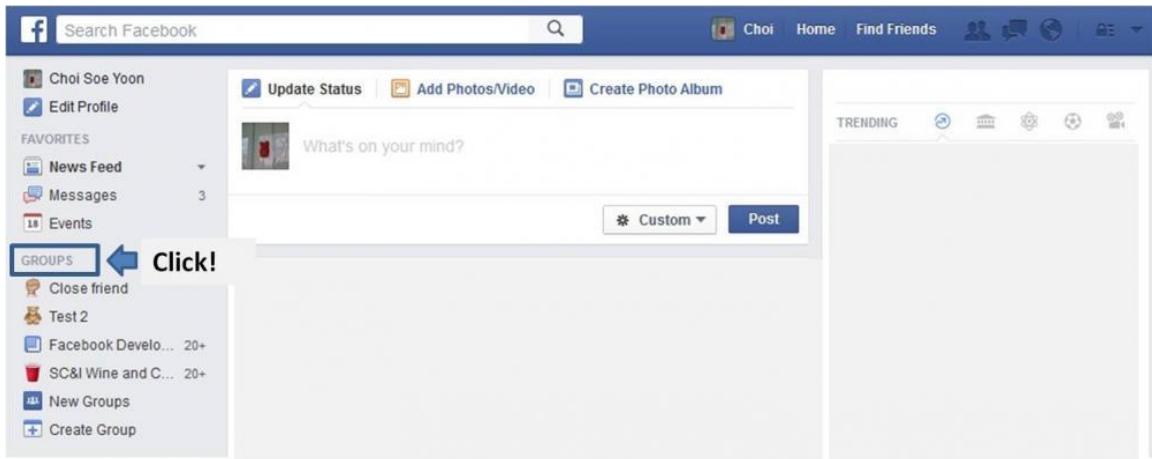
Please answer this question based on the feature or setting shown.

How much effort do you feel it takes to customize this feature or setting effectively?

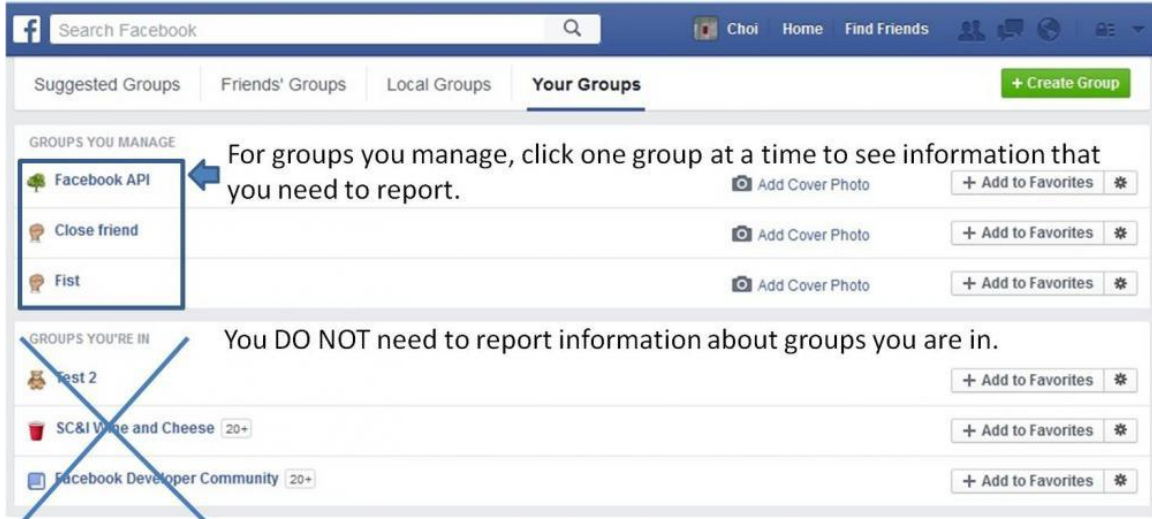
Not at all Little A little Neutral Somewhat Much A great deal
 ----- O ----- O ----- O ----- O ----- O ----- O -----

Referring to the images below, **report the name and the number of members in ALL groups that YOU MANAGE.** Please carefully see the images below to learn how to find the information that you need to report.

1. Click "Groups" shown on the left side of your Facebook interface.



2. See if you have a group that **you manage.** **If you have group(s) you manage,** click the icon of each group to see information that you need to report. If you do not have a group that you manage, you can skip this part of the survey.



3. After clicking on the group icon, report the name and the number of members in each group as shown in the image below.

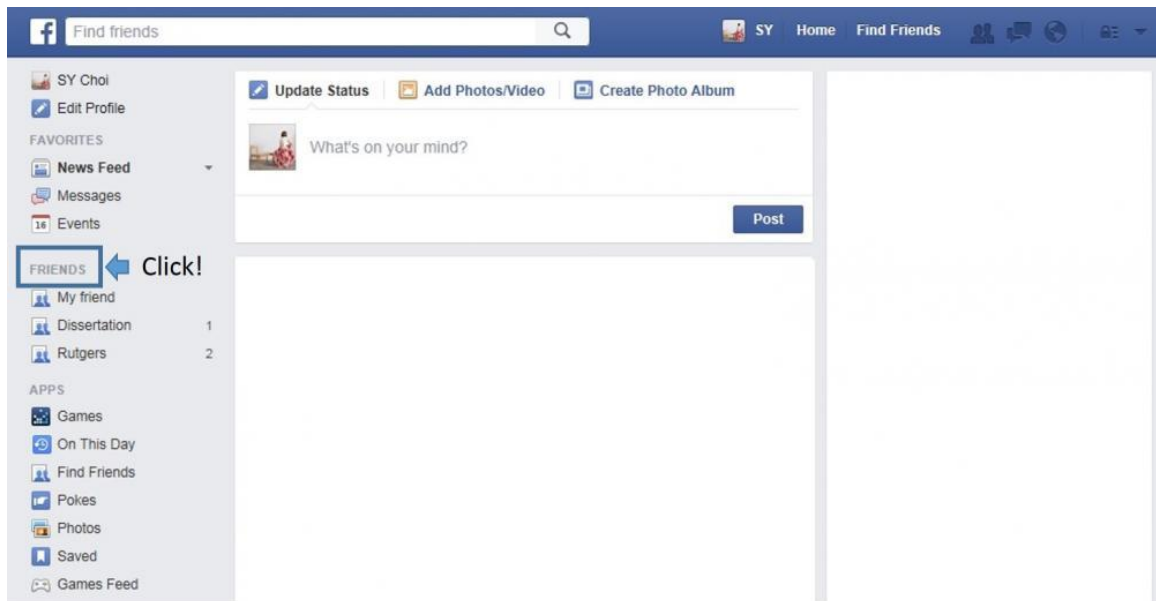


Once you report the name and number of friends in the group that you manage, please report the next one by simply clicking on the icon of that group. **If you do not have a group you manage, you can skip this part of the survey.**

Name of Group 1 _____ Number of members in this group _____
 Name of Group 2 _____ Number of members in this group _____
 Name of Group 3 _____ Number of members in this group _____

Referring to the images below, **report the name and the number of friends in ALL friend lists with an icon** . Please carefully see the images below to learn how to find the information that you need to report.

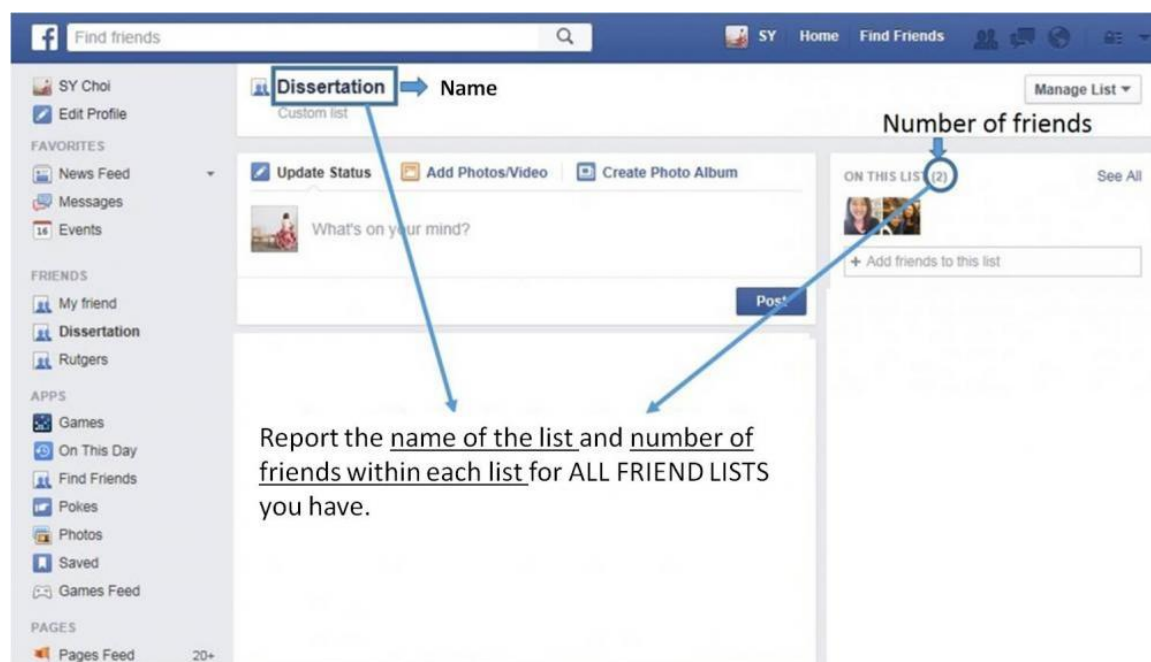
1. Click "Friends" shown on the left side of your Facebook interface.



2. See if you have a **friend list**. **A friend list comes with an icon of two blue persons** . If you have a friend list, click the icon of each friend list to see information that you need to report. If you do not have a friend list, you can skip this part of the survey.



3. Report the name of the chosen friend list, then the number of friends in this list as shown in the image below.



Once you report the name and number of friends in the first friend list, please report the next one by simply clicking on the icon of that friend list. **If you do not have a friend list, you can skip this part of the survey.**

Name of Friend list 1	_____	Number of friends in this list	_____
Name of Friend list 2	_____	Number of friends in this list	_____
Name of Friend list 3	_____	Number of friends in this list	_____

Please indicate your level of agreement with the following statements.

Strongly		Somewhat		Neither		Somewhat		Strongly	
Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree	Agree
0	0	0	0	0	0	0	0	0	0

- Untagging myself from others' posts or photos on Facebook does not fit norms of Facebook use.
- My Facebook friends may feel bad if they find me untagging myself from their posts or photos.
- Facebook users generally wish their Facebook friends not to untag themselves from their posts or photos.

Please indicate your level of agreement with the following statements.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- Deleting others' posts on my timeline does not fit norms of Facebook use.
- My Facebook friends may feel bad if they find me deleting their posts on my timeline.
- Facebook users generally wish their Facebook friends not to delete their posts on timeline.

Please indicate your level of agreement with the following statements.

By using Facebook, I can

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- Meet new people.
- Use advanced search to look for specific types of people.

Please indicate your level of agreement with the following statements.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

When I am on Facebook,

- I feel I am interacting simultaneously with my Facebook friends.
- I feel my friends are also available on Facebook.
- My Facebook friends give quick responses to my actions.

Please indicate your level of agreement with the following statements.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- I understand terms/words relating to Facebook's interface.
- I feel confident describing functions of Facebook features.
- I feel confident learning advanced skills needed to use Facebook features.
- I can turn to an online discussion group for Facebook use when help is needed.

Please indicate **how frequently you engage in the following activities.**

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- Post a comment on social media postings, status updates, photos, etc.
- Browse social media profiles and photos.
- Read postings on social media.

Please indicate your level of agreement with the following statements about your activity on Facebook.

			Neither			
Strongly		Somewhat	Agree nor	Somewhat		Strongly
Disagree	Disagree	Disagree	Disagree	Agree	Agree	Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- On Facebook, I use shorthand (e.g., pseudonyms or limited details) when discussing sensitive information so others have limited access to know my personal information.
- When I post on Facebook, I consider whether the information that I am about to post is appropriate to share with others.
- I have limited the personal information posted on Facebook.
- I make posts on Facebook after considering who may view the posts.

Please report how often you engage in the following activity on Facebook.

How often do you post a status update to the selected group of friends using privacy features (e.g., Facebook groups, Facebook friend lists)?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

Please indicate your level of agreement with the following statements about your activity on Facebook.

	Strongly		Somewhat	Neither	Somewhat		Strongly
	Disagree	Disagree	Disagree	Agree nor	Agree	Agree	Agree
				Disagree			
	O	O	O	O	O	O	O

- The privacy features (e.g., Facebook friend lists or Facebook groups) allow me to distinguish boundaries across friends within the network.
- By using privacy features, I can determine faster what to share with whom on Facebook.
- Having these privacy features helps me reduce concerns about making inappropriate posts on Facebook.
- These features fulfill my need to protect privacy on Facebook.

How often do you post a status update **excluding some friends?**

		Very				Very	
	Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
	O	O	O	O	O	O	O

Please report how often others have posted on your Facebook timeline.

How often have others posted on your Facebook timeline? (This activity pertains only to "posting" on your timeline, but NOT "commenting" your posts.)

		Very				Very	
	Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
	O	O	O	O	O	O	O

Please report how often you engage in the following activity on Facebook.

How often have you deleted posts that others made on your timeline? (This activity pertains only to "deleting others' posts" on your timeline, but NOT "deleting others' comments to your posts.")

		Very				Very	
	Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
	O	O	O	O	O	O	O

Please indicate your level of agreement with the following statements.

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

When I delete another's posts,

- I worry that people who are not my friends could have seen the deleted posts.
- I am concerned that people I do not want to see the post could have seen it.
- I am concerned that unwanted others may have looked at the post.

Please report the degree to which you feel comfortable when deleting others' posts.
When you are to delete others' posts, do you generally feel comfortable?

						A great
Not at all	Little	A little	Neutral	Somewhat	Much	deal
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

Please indicate **how often you have been tagged on Facebook.**

How often have you been tagged into others' posts?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

Please indicate your level of agreement with the following statements.

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

When I am tagged to another's posts,

- I worry about people who are not my friends seeing it.
- I am concerned that people I do not want to see the tagged post will see it.
- I am concerned that unwanted others may look at the tagged post.

Please indicate how often you untagged yourself on Facebook.

How often have you untagged yourself in a photo or post that was posted by others?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

Please indicate your level of agreement with the following statements.

Never	Very Rarely	Rarely	Occasionally	Frequently	Very Frequently	Always
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

When I untag myself from another's posts,

- I worry that people who are not my friends could have seen the post.
- I am concerned that people I do not want to see the tagged post could have seen it.
- I am concerned that unwanted others may have looked at the tagged post.

Please report the degree to which you feel comfortable when untagging yourself in others' posts. When you are to untag yourself in others' posts, do you generally feel comfortable?

Not at all	Little	A little	Neutral	Somewhat	Much	A great deal
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

Please respond to the following question about your Facebook use.

How often do you use Facebook?

Less than a few times per month	A few times per month	A few times per week	Daily	More than 2-3 times per day	More than 4 times per day
-----	-----	-----	-----	-----	-----
O	O	O	O	O	O

About how many total Facebook friends do you have?

10 or less	11-50	51- 100	101- 150	151- 200	201- 250	251- 300	301- 400	more than 400
-----	-----	-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O	O	O

Think about the previous week. On average, how many minutes per day did you spend on Facebook?

Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	more than 3 hours
-----	-----	-----	-----	-----	-----
O	O	O	O	O	O

Please indicate your level of agreement with the following statements.

Strongly			Neither			Strongly
Disagree	Disagree	Somewhat	Agree nor	Somewhat	Agree	Agree
		Disagree	Disagree	Agree		
---	---	---	---	---	---	---
O	O	O	O	O	O	O

- Facebook is part of my everyday activity.
- I am proud to tell people I'm on Facebook.
- Facebook has become part of my daily routine.
- I feel out of touch when I haven't logged onto Facebook for a while.
- I feel I am part of the Facebook community.
- I would be sorry if Facebook shut down.

Please report how often you engage in the following activity on Facebook.

How often do you post a status update to Facebook friends?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
---	---	---	---	---	---	---
O	O	O	O	O	O	O

Please report how often you engage in the following activity on Facebook.

How often do you post comments to others' posts?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
---	---	---	---	---	---	---
O	O	O	O	O	O	O

Please report how often you engage in the following activity on Facebook.

How often do you tag others in your posts or photos?

	Very				Very	
Never	Rarely	Rarely	Occasionally	Frequently	Frequently	Always
---	---	---	---	---	---	---
O	O	O	O	O	O	O

Please indicate your level of agreement with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- I feel confident dealing with the ways that I can control who will see my information posted on Facebook.
- I have control over information on Facebook.
- I have the knowledge necessary to use privacy features to regulate information on Facebook.
- Given the knowledge it takes to use the privacy features, it would be easy for me to control information flow on Facebook.

Please indicate your level of agreement with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- I am careful in what I post to Facebook because I worry about people who are not my friends seeing it.
- I am concerned about privacy when using Facebook.
- I am concerned that people I do not want to see my post will see it.
- I am concerned that unwanted others (employer, romantic partner) may look at my information on Facebook.

Please indicate your level of agreement with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
-----	-----	-----	-----	-----	-----	-----
O	O	O	O	O	O	O

- My disclosures on Facebook is limited to just a few specific topics.
- My disclosures on Facebook cover diverse issues.
- I share a wide variety of topics on Facebook.
- It is usual for me to share on multiple topics on Facebook.

Please indicate your level of agreement with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
----- O	----- O	----- O	----- O	----- O	----- O	----- O

- I share in detail how I feel on Facebook.
- I share intimate or personal things about myself on Facebook.
- My disclosures stay on the surface of most topics on Facebook.

How long have you been an active member of Facebook?

I do not have a Facebook account.	Less than 6 months	More than 6 months but less than a year	At least a year but less than 2 years	At least 2 years but less than 4 years	At least 4 years but less than 6 years	More than 6 years
----- O	----- O	----- O	----- O	----- O	----- O	----- O

Please state which gender you identify yourself as.

----- Male	----- Female
----- O	----- O

What year were you born?


What is your race/ethnicity?

White, Non- Hispanic	Black, Non- Hispanic	Hispanic	Asian American	Middle Eastern	Arab
----- O	----- O	----- O	----- O	----- O	----- O
Pacific					
African	Asian	Caribbean	Islander	Bi/Multiracial	Other
----- O	----- O	----- O	----- O	----- O	----- O

This is your **survey number**. Please write down this number. You will need this number in the next part of this survey. Once you have written down the survey number, please click next. You are almost there! ****In the next part of the survey, certain pages may load slowly based on your Facebook privacy settings. Please do not refresh any page while the page is loading.****

Second part of survey under API application

Once a participant logs in, s/he will see the most recent status updates (maximum of 6 status update) in the past six months towards (a) all friends, (b) all friends excluding any friends, (c) all friends excluding any friend lists, (d) friend lists, and (e) Facebook groups. Each shown status update indicates the target of the update next to the message.



doppeldrivers.com/ru_social_survey/index.php#_a_

Privacy and Connectivity in Social Media

Thanks for logging in, Choi Soe Yoon

[Logout](#)

Please do not refresh any webpage while participating in this survey. When the next webpage fails to load, then click on the "next" button again.

Please enter your survey number and click the next button.

Your survey number:

[Next](#)

[Privacy Policy](#)

Privacy and Connectivity in Social Media

Thanks for logging in, Choi Soe Yoon
[Logout](#)

You shared the following post with your friends in group "group name".

"Lunch with Prof. O'Connor on August 3"

1. Please indicate your level of agreement with the following statements about the above post.

[illegible]

2. Please indicate your level of agreement with the following statements about the above post.

[illegible]

3. Please indicate your level of agreement with the following statements about the above post.

By sharing this message:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The audience of this message would feel that I can fit into their circle of friends.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The audience of this message would see me pleasant to be with.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The audience of this message would feel that they know me personally.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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