

Pragmatic Tool vs. Relational Hindrance: Exploring Why Some Social Media Users Avoid Privacy Features

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Social media privacy features can act as a mechanism for regulating interpersonal relationships, but why do some people not use these features? Through an interview study of 56 social media users, we found two high-level perspectives towards social media and privacy that affected attitudes towards and usage of privacy features. Some users took a pragmatic approach to using social media and felt comfortable using various privacy features as a tool to manage their social relationships (e.g., avoiding bothersome posts, not feeling compelled to interact). However, there were also users who viewed taking such privacy actions as a relational hindrance and were concerned how using certain features to meet their own needs would harm their relationships with others. Through a subsequent survey (N=320), we reveal how these two perspectives impact user behavior across four social media platforms (Facebook, Instagram, LinkedIn, Twitter). Users who viewed social media as a pragmatic tool indeed used privacy features more. On the other hand, users who focused on how privacy can serve as a relational hindrance avoided using these features and, instead, prioritized social engagement and took a more indirect approach to protecting their privacy. Furthermore, the results show how these perspectives vary by individual rather than by privacy feature. These findings demonstrate the need to consider different perspectives towards social media and privacy when trying to understand and design for user behavior.

CCS Concepts: • **Security and privacy** → **Social aspects of security and privacy** • **Human-centered computing** → **Empirical studies in HCI** • **Human-centered computing** → **Social media**

KEYWORDS

Social Media; Individual Differences; Privacy Attitudes; Privacy Behaviors; Privacy Features

ACM Reference format:

Xinru Page, Reza Ghaiumy Anaraky, Bart P. Knijnenburg and Pamela J. Wisniewski. 2019. Pragmatic Tool vs. Relational Hindrance: Exploring Why Some Social Media Users Avoid Privacy Features. In *Proceedings of the ACM on Human-Computer Interaction*, Vol. 3, No. CSCW, Article 110, November 2019. ACM, New York, NY, USA. 23 pages. <https://doi.org/10.1145/3359212>

1 INTRODUCTION

It's complicated. That is how Pew Research characterizes Americans' feelings about social media amidst perceived privacy violations stemming from recent public revelations; for

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<https://doi.org/10.1145/3359212>

example, Cambridge Analytica's harvesting of Facebook data to influence the last Presidential election [16]. On the one hand, 88% of young adults (ages 18-29) and 69% of all adults in the United States have at least one social media account; the most popular social media platforms include Facebook, YouTube, Twitter, Instagram, and LinkedIn [35]. On the other hand, 91% of these social media users believe they have lost control over their personal privacy via social media platforms [33].

As a result of widespread social media use and pervasive concerns regarding end-user privacy, researchers (e.g., [14,39,48]) have engaged in understanding social media users' perceptions, attitudes, and behaviors around privacy [44]. As a community, we have worked to deconstruct the "privacy paradox" [4,27] (where an individual's stated privacy concerns are not aligned with their actual disclosure behaviors), and this effort has led researchers down the path of explaining the complexities in users' decision-making about self-disclosure [51]. For instance, the "privacy calculus" framework [20] posits that users weigh the costs versus the benefits of disclosure. Other researchers have demonstrated that social media users, like everyone, have bounded rationality [2] and use heuristics for decision-making; therefore, they often do not make optimal privacy choices [17]. Another school of thought is that privacy is highly contextual and depends on appropriate flow in information based on the actors involved, the type of information being shared, and how the information is being transmitted [26]. Individuals can choose to share private information with others, which then becomes co-owned, and boundary turbulence can occur if individuals have different expectations for how the information should be co-managed [32]. Others have shown that when users do feel their privacy has been violated, some will limit their social media use [6] or exercise ineffective coping behaviors in an attempt to regain their desired privacy levels [49].

One line of inquiry investigates the use of *privacy features*, which allow people to manage their privacy, enabling self-disclosure [41]. Empirical research further reveals that people use different privacy features to different extents [48]. However, it is unclear what leads people to use certain features and not others, and more specifically, what leads to variations in usage between individuals? This research seeks to understand people's attitudes towards use and non-use of various privacy features. This could help explain seemingly paradoxical gaps between stated privacy concerns and behaviors. Furthermore, while much of the literature is focused on predicting self-disclosure [18,39], less research has investigated whether and how users' attitudes towards using certain privacy features may influence a broader range of social media behaviors beyond self-disclosure and across multiple social media platforms [46,48].

To address these limitations, we contribute to the social media privacy literature by examining social media users' attitudes towards using (or not using) various privacy features. We include both information management features (e.g., deleting posts, untagging), as well as relationship management features (e.g., unfollow, unfriending) which have been conceptually distinguished in prior privacy literature [46,48]. Our study addresses the following research questions:

- **RQ1:** *How do social media users feel about using different privacy features?*
- **RQ2:** *Do these attitudes vary across different social media platforms?*
- **RQ3:** *How do these attitudes influence their usage (or non-use) of these features?*

To answer these questions, we conducted a mixed methods user study involving an interview study and a survey study. Our qualitative results informed the design of our quantitative survey,

which empirically validated the emergent interview themes and showed how different attitudes towards social media and privacy influence behavior.

First, we interviewed 56 social media users to ask them about their general social media use, social interactions, feature use, goals, and attitudes. We found that privacy feature usage was often driven by two distinct perspectives towards social media and using privacy features as a means to regulate interpersonal boundaries. Many participants (55%) viewed social media as a pragmatic tool and focused on how the use of privacy features could benefit them. However, 43% of our participants focused on the use of privacy features on social media as a *relational hindrance*. They considered the social meaning conveyed when using various privacy features and performing privacy actions, and they worried that using these features could damage their relationships. While these viewpoints were not always mutually exclusive, participants who drew from primarily one perspective or another exhibited distinct proclivities towards or against using social media privacy features for boundary regulation.

Overall, we found that these perspectives towards social media and privacy helped explain and shape the subsequent privacy behaviors of these users. Namely, those drawing from a pragmatic perspective tended to use privacy features without qualm, while those drawing from a relational hindrance perspective engaged in fewer, more discreet, or indirect privacy behaviors, such as vaguebooking (an indirect form of self-disclosure [7]). These social media users tended to place high value on social feedback (such as “Likes” and comments), showing that the emotional symbolism of these interactions was more important to them than pragmatic privacy gains. Drawing from Altman’s definition of privacy as boundary regulation, where social isolation is as much of a privacy problem as being overly connected [3,31], these social media users feared social isolation more than they feared privacy violations.

To verify generalizability of our qualitative findings, we administered a web-based survey to a separate sample of 320 social media users. We operationalized constructs for these two attitudes (i.e., pragmatic tool and relational hindrance) and examined their impact on users’ privacy behaviors. Conducting a cross-platform analysis of privacy attitudes and behaviors on Facebook, Instagram, Twitter, and LinkedIn, we confirm that the different attitudes indeed influenced privacy and social behaviors across platforms. Furthermore, our analysis shows how these privacy attitudes are an *individual-level difference* rather than an attitude that varies by platform or by privacy feature. These findings are especially relevant at a time when privacy concerns continue to grow, and the public increasingly demands that social media companies respect their users’ privacy. Understanding whether and, perhaps more importantly, *why* current privacy features may not support users’ needs is a crucial step towards addressing social media privacy concerns. Through this work, we make the following novel contributions:

- Identify different perspectives towards social media and privacy (i.e., pragmatic tool and relational hindrance) that shape users’ willingness to use privacy features
- Show how these perspectives help explain users’ privacy and other social media behaviors
- Perform a cross-platform analysis to demonstrate how these findings apply across four popular social media platforms (i.e., Facebook, Instagram, Twitter, and LinkedIn), and uncover platform-specific variations
- Provide design-specific guidelines for the design of social media privacy features that account for individual differences, such as designing “*privacy as discretion*” for those

who are concerned that using privacy features may harm their relationships with others.

This work contributes to the body of research that identifies individual and cultural variations in privacy preferences (c.f., [1,21,28,43,46,47]). It takes a step further by uncovering the motivations that are behind individual differences in social media privacy attitudes and behaviors. This work moves towards unpacking the seeming “privacy paradox” of why social media users’ privacy concerns may not align with their behaviors and opens the way for supporting a broader range of individuals in meeting their privacy needs.

2 RELATED WORK

Our research falls at the intersection of privacy and social media. We provide an overview of how our work contributes to this body of work.

2.1 Privacy as Interpersonal Boundary Regulation

We use Altman’s [3] conceptualization of privacy as a process of interpersonal boundary regulation as the theoretical framework for our research. Altman defines privacy as a type of “interpersonal boundary process by which a person or group regulates interaction with others,” by altering the degree of openness of the self to others. According to Altman, boundary regulation is an interactive process where two or more individuals collaborate in order to negotiate an acceptable level of social interaction; as such, the process is dialectic in nature, balancing both the restriction and seeking of social interaction with others [3].

Boundary regulation allows for feedback and readjustment, along with a dynamic need for varying levels of separateness and togetherness [3]. Thus, this process seeks to optimize social interactions, with the sub-optimal endpoints ranging from *social crowding* (receiving more social interaction than desired), to *social isolation* (receiving less social interaction than desired). Individuals have different mechanisms for erecting boundaries, adjusting these mechanisms as their needs change over time [3]. Palen and Dourish’s [31] foundational work on networked privacy draws on Altman’s conception to explain boundary mechanisms in technology-mediated interaction. They explain how online privacy consists of boundary negotiations beyond just negotiating information disclosure to one’s desired level of privacy. For example, people use different boundary mechanisms to negotiate one’s identity and orientation/behavior towards various others, as well as regulating temporally-based expectations of past or future actions. Applying Altman’s theory to our work, we frame social media privacy features as a type of boundary mechanism for regulating interpersonal privacy boundaries. We study how attitudes about social media and privacy influence the use of these mechanisms.

2.2 Privacy and Social Media

Altman’s work on boundary regulation has been used extensively to frame research in privacy in social media (e.g., [19,38,40,47]). For instance, early work by Tufekci examined disclosure mechanisms used by college students on MySpace and Facebook to manage the boundary between private and public [40]. She found that students are more likely to adjust profile visibility than to limit their disclosure behaviors [40]. Stutzman and Hartzog [37] examined the creation of multiple profiles on social media, primarily Facebook, as an information regulation mechanism. They identified three types of boundary regulation within this context

(pseudonymity, practical obscurity, transparent separations) and four over-arching motives for these mechanisms (privacy, identity, utility, propriety). Similarly, Lampinen et al. created a framework of strategies for managing private versus public disclosures [19]. This framework defined three dimensions by which strategies differed: behavioral vs. mental, individual vs. collaborative, and preventative vs. corrective. Wisniewski et al. profiled Facebook users based on the privacy features they used most frequently, identifying six unique profiles (minimalists, self-censors, time-savers, balancers, selective sharers, and maximizers) [48]. They go beyond information management features (e.g., deleting posts, untagging) that are typically examined in the literature, and point out that relationship management features (e.g., unfollow, unfriending) are also important to consider.

An underlying theme shared across the studies above is that different people have different motivations and take different approaches to managing their interpersonal privacy on social media. These differences may be rooted in people's perceptions ("folk models", cf. [42]) of the social context in which their interpersonal privacy behaviors take place: Some may attest that social network interactions are largely transactional and may therefore view privacy mechanisms as pragmatic tools to regulate their boundaries, while others invest emotionally in their social media interactions and presume that boundary regulation actions can negatively impact their social relationships. Tying back to Altman's original theory [3], if an individual feels socially isolated, they may be less motivated to use boundary mechanisms if they feel that this would hinder their social interactions with others. However, this social aspect of Altman's conceptualization of privacy as interpersonal boundary regulation process tends to be less emphasized in the social media privacy literature than the privacy (i.e., "less open") aspects of interpersonal boundary regulation [22,50].

2.3 Social Media Privacy Features

There is also a gap in the above literature in terms of understanding how social media and privacy attitudes influence the use of certain privacy features. Earlier privacy studies often used Westin's privacy segmentation [43] that classifies people as coming from three different privacy perspectives which affect privacy behaviors (i.e., Fundamentalists, Pragmatists, Unconcerned). Scholars subsequently adapted this to online contexts and pointed out that people differ in their technical protection behaviors [10] and awareness of information flow [23] which has been used to predict disclosure practices and social media usage, with mixed results [5,15] resulting in a privacy paradox. This may be because researchers often limit privacy to information disclosures, rather than using Altman's broader conceptualization of privacy as an interpersonal boundary regulation process [46]. Using Altman's broader framing, Wisniewski et al. [46] conducted an analysis of privacy settings and/or features for boundary regulation across five different social media platforms. They categorized privacy features by boundary type: 1) information disclosure (e.g., access control), 2) relationship (e.g., friending/unfriending), 3) network (e.g., access to one's connections), 4) territorial (e.g., managing content posted to one's Timeline or Newsfeed), and 5) interactional (e.g., blocking an individual). This more social depiction of privacy and social media features fit well with our interview data and, therefore, also informed the design of our survey measures. For example, unfriending or rejecting a friend request helps people manage their relational boundaries. Untagging or deleting a post are two ways an individual can manage their territorial boundaries, while blocking someone creates a more pronounced, interactional boundary between oneself and another. Therefore, we

examined these privacy features as forms of social media boundary regulation that go beyond information disclosure.

In our study, we probe social media users regarding their use of different social media features that can act as boundary mechanisms to encourage more or less social interaction (i.e., liking, commenting, untagging, unfollowing, unfriending, deleting posts, vaguebooking, blocking). Our work goes beyond understanding different ways of using privacy features to understanding *why* (in terms of attitudes and, perhaps, folk models) users may choose to use or not use a given privacy feature. Furthermore, we explore the connection between these choices and other social media behaviors, beyond self-disclosure.

3 METHODS

We conducted a mixed methods study. First, we conducted a qualitative interview study with 56 social media users to understand social media users' privacy practices across the various social media platforms that they use (RQ1 & RQ2). Then, we administered a web-based survey to a separate sample of 320 social media users to confirm our qualitative findings and assess how the different dispositions towards privacy features influenced users' privacy behaviors (RQ3).

3.1 Interview Study

3.1.1 Motivation and Interview Design

To understand how people perceive and use (or do not use) different social media and privacy features, we first conducted semi-structured interviews with 56 adult social media users. To ensure participants had a basic familiarity of social media features and an opportunity to build and interact with their social network on the platform, we limited participation to those who accessed social media at least weekly and had been on a platform for at least a year (examples of social media platforms given in the recruitment were Facebook, Instagram, Twitter, LinkedIn, Snapchat). Most participants used several social media platforms; therefore, we probed to understand their attitudes and behaviors across all social media platforms they used.

The interview started with open-ended questions about participants' social media practices. It also included questions about what social media they currently use, their social behavior online including feature use, their social interactions, positive as well as negative experiences, and their goals. For example, this included questions around general usage (e.g., "How often/Why do you use <platform>?", "Why do you use multiple platforms?"), posting content (e.g., "What type of information do you share?", "What do you not put on there?", "Do you share different things on different platforms?"), their network (e.g., "How many friends do you have?", "Is that number stable? How/Why does it change?", "How many are people you have never met?", "Who are you connected to on <platform>?"), their interactions (e.g., "How often do you interact with people on <platform>?", "What types of interactions do you have on social media?", "How often do posts upset you?", "Have you fought on social media?"), and overall negative and positive sentiments (e.g., "Tell me the positives of using social media? Negatives?"). The interviewer expanded on these questions with prompts to provide specific examples, and to elaborate on positive or negative consequences, and hopes or concerns. The word "privacy" was purposefully excluded from the interview script since it has been shown to have a priming effect [9,11]. Instead, words such as "uncomfortable" or "concern" were used. Without prompting, interviewees proactively talked about many of the social media and privacy

features when explaining how they use various platforms. When this occurred, we asked follow-up questions to clarify their motivations, challenges, concerns, and attitudes that helped contextualize how, if, and why they used or did not use these features.

3.1.2 Recruitment and Qualitative Data Analysis Approach

To reach a wide range of participants, we recruited via email lists, flyers, social media, and in-person from the campus and surrounding community of a private, midsized university in the northeastern United States. This included local industry and was supplemented by utilizing the researcher's personal networks. We also used a snowball sampling approach which allowed us to better understand dyadic relationships. Interviewees were distributed across psychosocial developmental age brackets [25]: 17 were in the late adolescence stage (18-24 yrs old, 6 male, 11 female), 14 early adulthood (25-34 yrs old, 7 male, 7 female), 11 middle adulthood (35-59 yrs old, 4 male, 7 female), 14 late adulthood (60+ yrs old, 2 male, 12 female). Interviews lasted 45 minutes on average and ranged between 25 and 85 minutes. All interviews were audiotaped, professionally transcribed, and analyzed.

The first author coded the interview data and iteratively updated the codebook based on consensus forming meetings with the other co-authors. We followed a hybrid approach of coding to theory, as well as an open-ended coding approach to allow themes to emerge. For instance, we initially investigated social media privacy feature usage based on existing privacy theories and frameworks (e.g., Privacy Calculus [20], Contextual Integrity [26], and Communication Privacy Management [32]). Our theoretically-based coding using psychosocial developmental theory also led to findings connecting social media behaviors to stage of life, which has been published elsewhere [29]. While we found many examples that reconfirmed these theories, the novel theme that emerged from our interviews revolved around an individual difference in how participants perceived the use of social media and, in turn, attitudes towards privacy features. For this research, we focus on the unintended finding that emerged from our open coding process: People held *different perspectives* towards social media that influenced their privacy behaviors (a.k.a., boundary regulation).

We identified two different social media perspectives that influenced privacy feature use (i.e., pragmatic tool and relational hindrance). Based on this insight, we then took a more structured approach by coding each interview for these two perspectives in relation to social media and privacy feature use. Privacy features were identified based on Wisniewski et al.'s [46] categorization of privacy features by boundary type (i.e., features that control information disclosure-, relationship-, network-, territorial-, and interactional-boundaries). We intentionally included all other social media feature use (e.g., reshare, tag) in addition to privacy features. This allowed us to capture behaviors that might not traditionally be classified as "privacy" but aligned with social media attitudes around use and non-use. Interviewees discussed a myriad of social media and privacy features. Therefore, in our follow-up survey, we included features that were brought up most frequently during the interviews and clearly aligned with the two emergent attitudes. We describe our survey study in more detail in the next section.

3.2 Survey Study

3.2.1 Motivation and Survey Design

Next, we developed a survey investigating participants' social media attitudes related to using these features. The survey included measurement scales meant to validate the existence of the *perspectives* towards social media and privacy uncovered in the interview study (i.e., pragmatic tool and relational hindrance). Moreover, we included *privacy and social media features* discussed by at least half the interviewees, and that aligned with these perspectives (i.e., relationship management and post management features, as well as vaguebooking [7] and placing importance on social media exchanges such as "Likes"). To check for survey understandability and to roughly gauge the validity of the measured constructs, we piloted the survey items used in this study as part of a larger survey advertised on multiple Craigslist sites and adjusted the survey based on the results.

3.2.2 Recruitment and Quantitative Data Analysis Approach

We observed that this perspective of viewing privacy as a relational hindrance was most prevalent among young adults (late adolescents aged 18-24). So we decided to perform an initial exploration of the relationship between these perspectives and social media behaviors in a student sample. In February of 2018, we advertised the final survey to email lists and university-related social media groups at three different U.S. universities: a mid-size private university in the Northeast region, a mid-size private university in the South, and a large public university in the South. The first 40 respondents each received a \$10 Amazon.com gift card and all respondents were entered into a drawing for one of two \$100 gift cards.

Each participant was asked to report the frequency with which they used each of four social networking platforms: Facebook, Instagram, LinkedIn, and Twitter. We randomly selected one among those the user reported that they "check or use" at least a few times a month (see [35] for typical usage statistics of users), and focused the remainder of each user's survey on that platform.

A total of 459 participants completed the survey. We eliminated responses that failed quality checks (i.e., failing on > 3 of 11 reverse-coded items, attention checks, redundant questions, etc.). We also removed those participants who used all platforms less than monthly. The remaining 320 valid responses were between 18 and 46 years old (mean: 21.3). 88.6 percent of them had lived in the US for at least 5 years.

To analyze the data, we first conducted a series of Exploratory Factor Analyses (EFA) to confirm the dimensions of privacy dispositions uncovered in our qualitative results. We then used these dimensions as predictors in factorial ANOVAs to examine their effect on the use of privacy features and other social media behaviors.

4 FINDINGS

We uncovered two perspectives towards social media use and privacy that impacted people's privacy behaviors. Many saw privacy as a *pragmatic tool* and focused on how being able to delete posts, unfriend, and engage in other privacy actions are very practical ways to achieve their personal goals and desires. On the other hand, there were many who saw privacy as a *relational hindrance* and worried about how privacy actions would affect their relationship with others. Moreover, these attitudes appeared tied to an individual, rather than vary feature by feature. In the sections that follow, we present the qualitative findings that describe these attitudes towards privacy and illustrate how it influenced social media behaviors. Then we describe the survey results that confirm and expand upon these qualitative findings.

4.1 Privacy as Pragmatic Tool

Many interviewees felt that social media should be used in a very pragmatic way. As a result, they focused on how privacy features are practical for severing ties and managing information. The following themes represent the attitudes of participants who primarily viewed social media and privacy as a *pragmatic tool*. 55% of our participants drew from this perspective.

4.1.1 Pragmatic Social Media Use

These interviewees took a very practical view of managing their social interactions with others, as well as the content that should be shared (or not shared) via their social media networks. In addition to complaining about users who post content that offers little utility, these users describe how they adhere to this rule of thumb themselves:

"I just don't feel that I'm offering any type of benefit to anyone else sharing either my personal opinion or just something that's happening. I think they can see it in other ways, more accurate sources." –Mike (male, 22)

They found others' non-utility-oriented posts such as frequent self-disclosure "*bothersome*" or "*confusing*." They removed or untagged content without hesitation. This ranged from deleting posts, to having "*an approval in place for photos so those don't automatically post if I'm tagged in a photo*," or some even deactivated their page when they no longer found it useful to have an account. Jillian (female, 21) explains, "*I will untag myself if I don't like the picture, or if I don't like the post either, then I'll untag myself and remove it from my timeline.*"

Moreover, users found "unfriend" to be extremely "*useful*" and "*a good feature of Facebook*." Some participants, like Aaron (male, 20), characterized unfriending as an effective way to remove "*people who are just pretty useless, like a lot of useless information going through my newsfeed*." Individuals holding this perspective would also unfriend contacts with whom they had regular offline interaction. Jen (female, 47) explains how she unfriends real life friends who do not interact with her on social media, even though they are actively engaging offline: "*Well I usually unfriend people I don't have any contact with, mainly because they don't use Facebook anymore or they don't have time to.*" She sees no need to keep them as Facebook contacts if they are not actively using Facebook. Lin echoes these feelings about offline friends who don't use Facebook:

"Oh, some people they just never show up on Facebook... I mean this is social media, so people need to be social to stay on Facebook. So if this person, they [aren't] even social with me, then I don't really want them to be in my Facebook you know. So then I will unfriend them." – Lin (female, 60+ age)

Focusing on the utility of each social media tie, some users even proactively blocked other users when they could see no useful reason for being connected. Gretchen (female, 35-59 age bracket) explains how "*I have zero Twitter followers because I block everyone that follows me... Because I don't tweet.*" She sees no reason for others to follow her if she is not generating any content. Similarly, on Instagram, using the unfollow feature is the perfect solution when others "*post too much*" and the user just does not want to see so many posts.

These examples show how a pragmatic attitude led users to focus on the usefulness of content as the criteria for posting or removing it. Similarly, connections with people were considered from a practical standpoint and keeping or removing friends/followers/connections was based on perceived utility. These users saw privacy features as a useful way to manage content and connections with people, and did not hesitate to use them.

4.1.2 It's Not Personal

Not only did participants come from a pragmatic point of view regarding the use of privacy features, they often held this view of social media in general. This utility-based perspective was evident in several aspects of these users' social media attitudes and behaviors, especially in their attitudes towards features such as commenting and "Likes." "Likes" were often treated very literally, as a way of conveying that someone likes the content of the post rather than conveying any information about the social relationship. Paris (male, 23) explains how, on Instagram, he likes *"the pictures because I really like the picture... the picture is funny or interesting, but not if I like the person."* In fact, he complained about people commenting needlessly and championed adding a "Dislike" button to convey the proper sentiment on social media: *"I knew that we had a conflict of opinion, so there was no point. Even if we debated for a week, we would never reach the conclusion. I would hope for, is that there would be a dislike button."* This dislike feature could accurately convey how he disagreed with a post so that he would not have to post a comment expressing his disagreement. His commenting *"would give them a base to comment further."* He wanted to accurately convey his opinion without it triggering a needlessly drawn out discussion. Paris perceived comments as problematic since they invite responses and counterargument.

Florence (female, 60+) recounts how she completely stopped using the "Like" feature on posts because she realized it would bombard others with useless information: *"If I just Like something, it winds up being on other people's Facebook pages and I just think you know, that's just not something they care about... I don't want to bother people with stuff."* Conveying her opinion through Likes became a nuisance rather than being a useful way to communicate. Thus, she no longer felt like conveying her personal opinions through the feature.

Charlotte (female, 60+) further observed that social conflicts arise for those who go beyond a pragmatic perspective and take the "Like" feature personally: *"The phenomenon of people saying, 'Well I'm not liking her picture anymore because she never likes mine,' I'm thinking that is a pretty petty person."* She felt it was absurd that the Like feature is interpreted by some as an action with social consequences. Others similarly found this *"ridiculous."*

Some individuals even discounted any meaning associated with Likes in an effort to manage their privacy:

"Because I know that people follow Facebook and then companies collect information on Facebook, what I do is I usually, if I like pictures, let's just say I like ten pictures, so five of them I say that I like, which is true, and then the other five I say that I don't like, which is not the truth, because I don't want the companies to collect my profile on Facebook....Some pictures I Like even though I don't like." – Kendall (female, 38)

Here Kendall ignores the semantics behind a "Like" in an effort to prevent the platform from knowing her preferences. Instead, she emphasizes actions that will help her protect her privacy.

She doesn't feel that her Facebook friends mind how her Likes don't reflect her true tastes. She is more focused on using the feature to mislead the platform.

Overall, these users discounted social by-products of using social media features. They did not take it personally if others did not Like or comment on their post, nor if someone did not respond right away. Neither did they consider how their use of features could offend others.

4.2 Privacy as Relational Hindrance

Now we turn to those who considered privacy a *relational hindrance*. These individuals focused on how performing a boundary regulation action on social media could negatively impact their social relationships. 43% of interviewees held this attitude. The following themes emerged when delving deeper into these beliefs:

4.2.1 Social Connections are Really Important to Me

Unlike the previous interviewees, for these participants, the desire for social connection strongly manifested in a desire for social feedback. This led to placing extreme importance on social media exchanges such as getting "Likes" or comments on one's posts. Deepti (female, 30) explained that when others "Like" a picture she posted, *"it's a pat on the back. I thought I looked pretty and it's an ego boost."* Users explained how they felt socially connected using these platforms:

"I think 'likes' especially on Instagram for me, make me feel like – I took a great photo. I had a good comment or just generally that people are appreciating a little snapshot of my life, which makes me feel good, make me feel like I am surrounded by people and they are taking part in the things I am doing, even if I am alone, but it is happening." – Taylor (female, 25-34 age bucket)

What really distinguished these individuals, though, was that not getting enough Likes and attention had a really negative impact on them. Mila asserts that she "would be all upset" if she didn't get "Likes" on a post. In fact, she strategizes to avoid this situation:

"I am sometimes cognizant of how many I am posting per day, because I feel if you post a ton, you just 'like' through ten photos on one day, you are not going to get as many 'likes' and this is something that I think about because I like getting 'likes'." – Mila (female, 25-34 age bucket)

Her mood and, arguably, emotional well-being were shaped by whether she had received enough Likes and attention to feel socially included. Several other interviewees echoed these sentiments. These interviewees felt more socially included by receiving others' attention in the form of profile views (LinkedIn), receiving "Likes", and comments. Often it was to an extent that the absence of these forms of feedback was damaging emotionally.

Some individuals who felt this way felt that it was actually unhealthy to care so much about getting "Likes":

"I think it is like cheap satisfaction. Initially it is exciting to get the number of likes growing but then after a few hours I feel like – why am I sharing so much? Why do I want to have so much attention" – Alejandro (male, 29)

But social connection was so important to them that they still had difficulty extracting themselves from the various social media platforms:

“I don’t like that I am so obsessed with Snapchat...So I deleted my app, but then redownloaded because I just missed it. I don’t know how to describe why, it just is.” – Zoe (female, 20)

These individuals found themselves desiring social connection and returning to social media to connect through “Likes” and comments.

4.2.2 Concern for How I Present Myself to Others

Overall, interviewees were very aware of what they posted and how it might reflect on them. Sophie (female, 60+) explains, *“I always think about who’s going to see [my posts].”* They were also careful to avoid explicitly asking for attention in their posts. Alva (female, 44) asserts, *“I’m not one of these people that posts things like oh I’m having a bad day, need prayer you know.”* However, sometimes they would post and then decide that the post was not reflecting well on them. Nonetheless, many resisted going back to edit, hide, or remove the post since it would be an indication that they cared too much about their image. Danilo (male, 22) explains how he does not remove posts since he’s *“a man”* and feels he should not be so concerned about what he puts up. He explains that even if he wanted to take a post down, *“if I was to delete the picture and then post a new picture, it is like I try to find so much attention. I feel bad for myself if I do that, so I just leave it.”*

In fact, despite the inclination for individuals to get *“pretty upset”* about not getting enough Likes or comments, this reticence to use privacy features meant that they were unwilling to delete and repost in order to gain more Likes. They felt that privacy management tactics and *“some of those strategies [to increase views] can be a little transparent. Those people whom I follow, I know that they really want a huge Instagram following, a lot of “likes”, thousands of people watching them.”* Linda (female, 25-34 age bracket) Since they felt that employing tactics such as editing or deleting and reposting would come across *“a little desperate,”* as if they were trying too hard, they *“certainly would never do that.”* As a result, these posts lingered and served as a reminder of failed attempts to garner social support and attention.

Interviewees had such strong assumptions that people avoid social media actions that could reflect badly, that it shaped their expectations of privacy. For example, Liz used Snapchat instead of texting because

“It is basically the same thing as you texting someone a picture of yourself. And then again I do not ever do that, I just use Snapchat. I guess, because it is not permanent and I am like... People can screenshot your Snapchat, if they really want to. But no one’s really gonna do that. Cause you see when other people screenshot your Snapchat. So you don’t want to look weird, if you screenshot other’s Snapchat, who you are not friends with.” – Liz (female, 20)

Liz operates as if the content will be deleted automatically since she assumes that no one would want to hurt their self-image by taking a screenshot. This creates an expectation of privacy that is tied to the assumption of this social norm.

4.2.3 It’s Important to Be Discreet as to Not Offend Others

An overarching theme that emerged is that users tried to meet their needs for social connection and privacy discreetly. The balance between connecting socially and not wanting to hurt their relationships led to alternative ways to manage their privacy. This most commonly manifest in two ways: being discreet with posts, and forsaking their own privacy needs to avoid offending others.

Many participants felt like they had to self-censor what they posted, as to not offend diverse audiences:

“I just find it harder today to post opinions about things because especially if you have a broad friend group... I have friends all over the spectrum.” – Darin (male, 20)

Users also explained the importance of discreet communications so as not to encourage unwanted social interactions with unintended parties:

“I’ve learnt in the past: don’t go to someone’s page and post ‘Hey, you wanna golf?’. Don’t post that as a message, because then anyone else that you friend sees that and then may say ‘oh, what about me, I’ll golf’... you get 5 people, who I bet they are ashamed, because I did not consider them. Or you get people, that you frankly do not want to golf with and they are like «I’ll golf with you!»” – Logan (male, 37)

These individuals were sensitive to how certain boundary regulation actions might offend others. Consequently, they carefully considered how all of their interactions might be perceived by others. This greatly shaped many of their online behaviors. For instance, Jack often went back to analyze his own past social media actions when he suspected that someone might be offended:

“It’s hard to interpret when people comment on social media, and I think it’s very easy for people to misconstrue commentary that is made, whether it’s about a picture or it’s a question being asked and their response, their response time, how fast do they respond to you. If you’re going back and forth with somebody over social media and it’s a quick conversation...Then, all of a sudden, there’s a pause and the person doesn’t get back to you in an hour, you say, ‘Well, did I, was my...?’ You look back at the feed and you say, “Did I say something that was wrong? Did I offend this person?” – Jack (male, 40)

Here Jack reads into someone else’s social media (in)action and interprets that something must be wrong. He then reviews his own actions to see how they may have been interpreted. This sensitivity to others withdrawing from them was characteristic.

Even when others’ posts bothered or affected them negatively in some way, they would still worry more about hurting the other person. Fred (male, 60) explains how he does not disconnect from others on social media: *“I just hide you know. I think it’s kind of rude to defriend somebody so I just hide.”* It was very common to avoid the unfriend, unfollow, remove connection, or block features that would disconnect them from others and could hurt others’ feelings. In fact, Eliza (female, 25-34) takes it even further by explaining, *“I feel that disconnecting from them, they would probably feel that I judge them. It is not that they gonna get a notification that says – Eliza unfriended you. But you feel that that is what they gonna get.”* She feels bad about disconnecting even though she recognizes that the other person is not notified.

These examples illustrate how important it was for these participants to consider other’s feelings and not to offend them. Social connections are very important to these participants. Even if it comes to suppressing their own needs, these individuals would do so in order to avoid hurting their relationships.

4.3 Empirically Validating the Different Perspectives and their Influence

Our qualitative analysis revealed these two very different perspectives of privacy, which appeared to impact users’ privacy management behaviors as well as their broader social media

behaviors. These perspectives were evident across their usage of multiple social media platforms. However, we wanted to verify the generalizability of our qualitative results and increase the precision in which we could quantitatively characterize these two different perspectives towards privacy. Therefore, we developed a survey to empirically validate our qualitative results with quantitative data collected from a larger sample.

First, we operationalized the *pragmatic tool* (PT) perspective of privacy by developing a scale that reflects the practical value of privacy features. We also operationalized the *relational hindrance* (RH) attitude by creating a scale that reflects users' concerns regarding the social meaning conveyed by privacy features. While it is conceivable that a given user may have different attitudes towards different social media privacy features, users in our interview study seemed to hold a similar attitude across features. However, we wanted to confirm whether these privacy attitudes were stable across different privacy features, and applicable to different platforms. Thus, we made sure to have items representing different features, as well as doing so for multiple platforms. We created measures for attitudes related to deleting a post, untagging, unfriending, and unfollowing based on the privacy features most commonly related to one or both of the perspectives during the interview study. We also operationalized alternative social media behaviors associated with those viewing privacy as a relational hindrance (the importance of Likes and comments, and a pre-validated scale to measure vague-booking). Based on our qualitative findings, we tested the following hypotheses:

- **H1:** *Privacy perspectives (whether someone views privacy as relational hindrance or pragmatic tool) vary by individual, not by feature.*
- **H2:** *Viewing privacy as a pragmatic tool is associated with more frequent use of privacy features.*
- **H3:** *Viewing privacy as a relational hindrance is associated with other social media behaviors and privacy management tactics.*

An implied, but not explicitly tested “non-hypothesis” was that relational hindrance would not be significantly associated with the use of traditional privacy features.

4.3.1 Descriptive Characteristics of Our Sample

The mean age of our participants was 21.3 years old, and there were 219 males, 126 females, and 4 participants who preferred not to disclose their gender. We measured frequency of use for each social media platform (9: almost constantly, 8: several times a day, 7: once a day, 6: 3-5 days a week, 5: 1-2 days a week, 4: every few weeks, 3: less often, 2: never but I have an account, 1: I do not have an account). The average usage for the respondents on each platform were Facebook=6.04, Instagram=6.47, LinkedIn=4.07, Twitter=5.98. We checked whether age, gender, and frequency of social media use related to different privacy attitudes and did not find any significant results for any platform (all p-values were >0.05). A breakdown of participants based on their differing attitudes toward privacy features as *pragmatic tool* or *relational hindrance* is shown in Figure 1. We dichotomized users' scores on each dimension using a median split². For

² Although this dichotomization *de facto* creates four groups of participants, we emphasize that the PT and RH concepts are linear. By no means do we suggest that these four groups have some intrinsic meaning; the dichotomization was

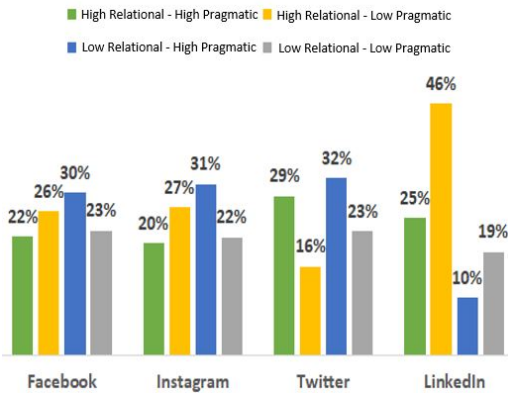


Figure 1. Privacy Attitudes across Platforms

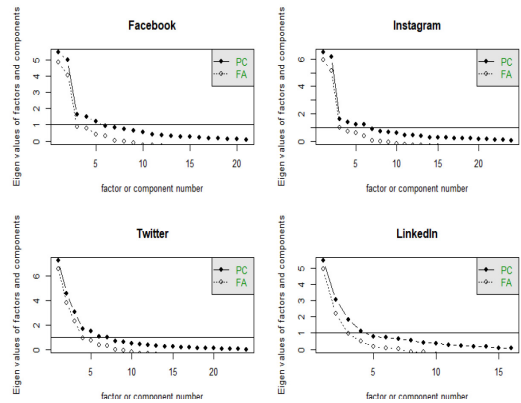


Figure 2. Scree plots

most platforms, slightly more participants identified with the pragmatic tool attitude than the relational hindrance attitude. However, LinkedIn had a relatively higher proportion of users with a relational hindrance attitude that is above the median. This may speak to the importance of maintaining professional relationships on LinkedIn. Also note that some participants scored high or low on both attitudinal scales, suggesting that the constructs are not mutually exclusive or all-inclusive in terms of attitudes towards privacy features.

4.3.2 Validating Relational Hindrance and Pragmatic Tool (H1)

To test H1, we determined the dimensionality of our new scales (RH, PT) through an Exploratory Factor Analysis (EFA). We asked about frequency of use for the privacy features that were most often discussed in our interviews in connection with these attitudes (listed in Table 1) measured on a 5-pt Likert scale: Never, Seldom, Sometimes, Often, Almost all the time. We conducted a series of EFAs on the Relational Hindrance (RH) and Pragmatic Tool (PT) survey items. EFA allows us to test whether RH and PT are global constructs (in which case we expect to find two large factors) or rather separate constructs per privacy feature (in which case we expect to find a separate pair of RH and PT factors for each privacy feature). We performed the analysis for each platform separately, since privacy features (which form the basis of the RH and PT attitudes) differ per platform.

Facebook. Of the 107 Facebook users in our sample, some were not familiar with the privacy features queried; hence, we removed them from this part of the analysis, leaving 88 participants (30/57/1 females/males/other gender). Twenty-four items (covering RH and PT attitudes towards untagging, deleting posts, and unfriending) were included in the EFA. Figure 2 shows the scree plot listing the eigenvalues of subsequent factors. The plot suggests that the first two factors explain the most variance. We thus ran a 2-factor EFA and used Weighted Least Square (WLS) extraction and Geomin rotation methods. Table 1 reports the EFA results. In this table, we removed any loading that is less than half of the loading on the other factor. The two factors align well with the RH and PT privacy attitudes.

done for reporting purposes only. To wit, participants who score low on both PT and RH might use a third, unexplored mental model to deal with privacy. We leave it to future research to uncover and understand this mental model.

Table 1. EFA results

Item	Facebook		Instagram		Twitter		LinkedIn	
	RH	PT	RH	PT	RH	PT	RH	PT
Untagging myself is useful		.56		.63		.56		
Untagging myself serves my needs well		.69		.68		.67		
Untagging myself helps me manage how others perceive me		.65		.75	.45	.49		
I untag myself when it benefits me		.65		.68		.56		
Deleting posts is useful to me		.76		.71		.68		.68
Deleting posts serves my needs well		.78		.85		.66		.73
Deleting posts helps me manage how others perceive me	.36	.66		.63		.78		.76
I delete posts when it benefits me		.65		.70		.67		.71
Unfriending is useful to me		.62		.63		.77		.79
Unfriending people serves my needs well		.55		.78		.80		.75
Unfriending helps me manage how others perceive me	.37	.44		.40	.37	.54		.82
I unfriend people when it benefits me		.40		.71		.66		.72
I worry that untagging would reflect badly on me	.63		.69		.61	.37		
I am concerned how untagging myself would impact others	.68		.63		.71			
I would feel bad about myself if I used the untag feature	.78		.75		.61	.37		
Untagging myself is inconsistent with who I am as a person	.45		.68		.47			
I worry that deleting posts would reflect badly on me	.63		.68		.55	.41	.46	.30
I am concerned how deleting posts would impact others	.61		.66		.67		.26	.26
I would feel bad about myself if I delete posts	.60		.65		.60		.43	
Deleting posts is inconsistent with who I am as a person	.36		.61		.47		.32	
I worry that unfriending people would reflect badly on me	.76		.78		.84		.78	
I am concerned how unfriending would impact others	.69		.79		.79		.74	
I would feel bad about myself if I unfriended people	.69		.75		.78		.76	
Unfriending people is inconsistent with who I am as a person	.50		.64		.50		.68	

There was no significant correlation between RH and PT ($r = 0.02$), suggesting that these attitudes are orthogonal. Moreover, within each factor there is no distinction between features, which supports H1.

Instagram. We ran the same analysis on the Instagram data of 93 participants (46/46/1 females/males/other) after removing seven who were unfamiliar with some of the features. Similar to Facebook, 24 items covering RH and PT attitudes towards untagging, deleting posts, and removing people were subjected to an EFA. Figure 2 shows Instagram’s scree plot, which also suggests a 2-factor model. Table 1 reports the EFA results, which again show a distinction between RH and PT attitudes, but not between the various features. There was again no significant correlation between RH and PT ($r = 0.01$).

Twitter. The Twitter dataset contains 24 items covering RH and PT attitudes towards untagging, deleting tweets, and blocking people. Thirty-one participants (16 females, 15 males) were included in this analysis. The low number of participants makes it difficult to evaluate the optimal number of factors in the scree plot (Figure 2). After various attempts we decided to extract two factors in line with the Facebook and Instagram data. The EFA results (Table 1) align with RH and PT attitude factors, with a small correlation of $r = 0.11$ between the two factors.

LinkedIn. The LinkedIn dataset contains 16 items for RH and PT attitudes based on deleting posts and removing people (untagging is much less common on LinkedIn). Our LinkedIn dataset had 48 participants (15 females, 33 males). Similar to Twitter, the scree plot (Figure 2) does not clearly indicate the number of factors, so we went with a 2-factor solution. The EFA (Table 1) again suggests distinct RH and PT factors, with a small correlation of $r = 0.22$ between them.

Overall. In summary, the EFAs of the four platforms all suggested a 2-factor solution distinguishing between RH and PT, but not distinguishing between features. Cronbach’s alpha of Relational Hindrance and Pragmatic Tool on each platform suggest good internal consistency: α_H Facebook: 0.89, α_U Facebook: 0.88, α_H Instagram: .90, α_H Instagram: 0.91, α_H Twitter: 0.85, α_U Twitter: 0.90, α_H Instagram: 0.87 and α_U Instagram: 0.89). We also attempted other factor solutions to separate the scale items by feature, but we did not find a clean, well-fitting model. Hence, H1 is supported.

4.3.3 Privacy Feature Use and Other Social Media Behaviors (H2 & H3)

Based on our qualitative insight about RH user’s tendency to be discreet, we decided to use Berryman et al.’s [8] scale to measure vaguebooking, a privacy behavior of using illusive language (e.g., I share vague updates that allude to something else on my platform account). Since we also found an overemphasis on Likes and comments, to measure this attitude we extended Scissor et al.’s [34] single item representing the importance of getting Likes to include 2 items representing importance of Likes and 2 representing comments (Getting Likes/Comments is important to me, I feel bad when I do not get enough Likes/Comments). We calculated Cronbach’s alpha of these constructs to ensure internal consistency (vaguebooking: 0.83, getting likes and comments: 0.82). We then conducted several factorial ANOVA tests to see the effects of RH and PT on these dependent variables.

To test H2-H3, we conducted a series of factorial ANOVAs with the dichotomized versions of Relational Hindrance (RH) and Pragmatic Tool (PT) as predictors (IVs) of the use of various privacy features and other social media behaviors (DVs). In Table 2, we report the regression coefficients of the main effects of RH and PT on privacy feature use and other social media behaviors. Several privacy features are positively and significantly related to the PT construct. This supports H2. We did not find a significant relationship between HR and the use of the privacy features.

Table 2. Regressions: Behavioral consequences of relational hindrance and pragmatic tool

DV = Behavior	IV = Relational Hindrance (RH)				IV = Pragmatic Tool (PT)			
	Facebook B (SE)	Insta-gram B (SE)	Twitter B (SE)	LinkedIn B (SE)	Facebook B (SE)	Instagram B (SE)	Twitter B (SE)	LinkedIn B (SE)
Privacy Feature Use								
Untag post	-.42 (.241)	-.09 (.190)	.15 (.173)	n/a	.28 (.244)	.75*** (.173)	.18 (.174)	n/a
Delete post	-.20 (.183)	-.02 (.172)	.12 (.168)	-.13 (.153)	.56*** (.173)	.50** (.164)	.36* (.161)	-.02 (.073)
Unfriend/ Remove Connection	-.28 (.179)	n/a	n/a	.03 (.107)	.43* (.175)	n/a	n/a	.08 (.101)
Block/Remove Follower	n/a	-.26 (.200)	.04 (.186)	n/a	n/a	.33 (.198)	.52*** (.164)	n/a
Reject friend/ Delete Request	-.10 (.213)	-.25 (.242)	.67 (.471)	-.01 (.179)	-.19 (.212)	.39 (.239)	.12 (.489)	.14 (.171)
Other Social Media Behaviors								
Vaguebooking	.45* (.220)	.05* (.255)	1.08* (.463)	.46 (.292)	-.05 (.225)	.23 (.260)	.40 (.247)	.00 (.285)
Comments/Likes Importance	1.08*** (.279)	.07* (.270)	n/a	.47 (.393)	.30 (.301)	.21 (.279)	n/a	-.50 (.372)

* p < 0.05, ** p < 0.01, *** p < 0.001

However, for RH, we did find a significant, positive relationship with vaguebooking and valuing comments and likes. Thus, this supports H3. Note that PT was not associated with any of the other social media behaviors. Furthermore, the interaction effect between RH and PT was not significant in any of these analyses. The exception is with LinkedIn: H2 and H3 were not supported for this platform.

5 DISCUSSION

We now discuss the implications of these two emergent perspectives and how they influence social media and privacy behavior. Then, we advocate for a shift in the way we design for privacy.

5.1 Attitude as an Important Individual Difference

Our research sheds light on how user behavior can differ for individuals who have different perspectives towards social media use and privacy. Our findings reveal that these perspectives are not tied to specific privacy features (RQ1) or social media platforms (RQ2), instead they present themselves as an *individual difference* among users. Further, viewing social media and the use of privacy features as a pragmatic tool versus a relational hindrance is not mutually exclusive. While most participants (about 55% on average for users across the four platforms) ascribed to one attitude or another, on average 24% of survey participants ascribed to both attitudes, and 22% ascribed to neither. This suggests that other social media and privacy attitudes may exist that could further explain the variance in users' social media and privacy behaviors.

Our findings also suggest that these perspectives may be driven by a higher-level "folk model" (cf. [42]) of the social impact of boundary regulation. As such, designers and researchers may be able to evaluate privacy attitudes at the individual level, as opposed to at the feature or platform level. This finding is useful in the context of recent efforts to provide social media users with user-tailored privacy functionality (cf. [45,48]): If this user-adaptive system is able to determine that the current user considers privacy as a relational hindrance (something that may be observed from their engagement in social features such as "Likes" and comments, or their indirect privacy behaviors), then the system may adjust the presentation of such settings so as to avoid the impression of relational hindrance (e.g., offer a "hide" button rather than an "unfriend" button). If, on the other hand, the system is able to determine that the current user considers privacy features as a pragmatic tool (something that may be observed from their use of a wide variety of privacy features), then the system may emphasize settings that allow users to exploit this pragmatic tool (e.g., emphasize the existence of untagging, deleting, and unfriending).

5.1.1 Unpacking the Privacy Paradox

Those who see social media and the use of privacy features as a *pragmatic tool* take a more literal approach to weighing costs and benefits, which is a typical characterization of privacy calculus [20]. However, those who see privacy as a *relational hindrance* introduce an emotional component that factors into their privacy decisions. For these individuals, even if using privacy features would be personally beneficial, they often choose to refrain for the sake of their relationships. These individuals do not want to do something that reflects negatively on them or may offend. This behavior might be perceived as paradoxical or irrational behavior from the

outside, but, in actuality, might be the most rational decision when weighing in the emotional and relational implications of taking such action. Thus, when investigating privacy practices on social media, researchers should take into account user's attitudes and goals. We argue that researchers should acknowledge that privacy is often a secondary goal; users engage with social media to seek social support, build social capital, and connect with others [12,36]. Therefore, privacy *cannot* be adequately studied in isolation from these "folk models" regarding the social contexts in which these behaviors are embedded. In conclusion, there are emotional and relational side effects of using privacy features on social media that must be accounted for in the decision to use such features. And, these effects vary based on the individual attitudes of social media users (RQ3).

Further, while the constructs for the two attitudes held robustly across different social media platforms, LinkedIn exhibited different trends in terms of the distribution of users across the two attitudes, as well as some of the behavioral correlations. This may be due to the more professional (as opposed to social) orientation of the platform or due to our lower sample size. However, it suggests that there may be a variance in individual attitudes towards different social media platforms, especially those that are used for more pragmatic versus social purposes.

5.2 Designing Privacy to Account for Individual Differences

In response to RQ3, we observed tensions between individuals who approached social media and privacy from different perspectives, which influenced their behavior. Those viewing it as a pragmatic tool often complained about the useless information that is being posted, oblivious or unsympathetic to the social desires and needs being expressed by those who view privacy as relational hindrance. On the flip side, more relationally-oriented participants interpreted social meaning into other's likes, comments, and other actions regardless of whether any was intended or not. This is in-line with research that shows Likes can be used for garnering support and resources [13]. Yet, pragmatic users do not use these features in the same way. This mismatch presents a challenge for future research to help users coming from different perspectives understand one another and reduce friction. One design recommendation would be to create privacy features that are more explicitly aligned with these different attitudes. For example, more pragmatic features, such as replacing unfriend/delete follower with a more innocuous feature name, as well as creating more nuanced features, such as being able to move contacts to more active or less active status, so that more pragmatic user can focus on active friends and followers without having to disconnect with less active ones (that the platform could hide and treat as dormant). Decoupling the negative social meaning from the functionality could help bridge the gap between different users.

5.2.1 Designing for "Privacy as Discretion"

When designing for privacy as an individual difference, how can we design social media privacy features for individuals who are more concerned about social isolation than they are privacy protection? Platform designers hoping to enhance support for privacy should start by taking a more holistic view of privacy as a boundary regulation [3], where increasing social connection is just as important as restricting it. Thus, privacy features need to be designed with an eye towards both helping the user maintain their interpersonal boundaries, but also avoiding conveying the wrong social signal that could isolate users from others. Certain privacy features were notably useful for accomplishing this balance, such as the ability to suppress notifications

from a contact without breaking ties to one another (e.g., unfollow in Facebook). Our study also highlights how avoiding privacy features (because they do not meet users' needs) could potentially result in social media practices that could negatively impact users. Wisniewski et al. [49] discuss such behaviors in the framework of coping mechanisms for privacy regulation, characterizing them as maladaptive practices such as withdrawal through self-censorship, ignoring content, and withdrawing from social media use resulting in a lack of authenticity as well as social isolation. Therefore, it is important that we design privacy features that are both pragmatic and *discrete*, to support users who fear that more explicit use could be detrimental to their social relationships.

Designing privacy as discretion might look differently than the binary boundary of "friend" or "unfriend," "follow" or "unfollow, and "tag" or "untag." For example, an individual may not want to reject a friend request, but at the same time, not ignore or accept it. Could there be a discrete option to accept a friend while seamlessly allowing the user to manage the bounds of this relationship? For instance, accepting the request while simultaneously limiting access to only publicly shared content? While separate privacy features often exist for this purpose (i.e., accept/reject friend request and audience control), they are often decoupled in the interface in a way that makes it more difficult for relationally-oriented users to negotiate this level of nuance in their interpersonal interactions with others. By intentionally designing for privacy as discretion, we might be able to improve the user experience for socially-motivated users in a way that also helps them manage their privacy boundary (as a secondary goal).

5.2.2 Considerations for Non-Users and Vulnerable Populations

Further, the tendencies towards pragmatic or relational social media attitudes have potential for explaining other social media phenomenon beyond the use of privacy features. For example, Page et al. [30] distinguish between social media non-users who face barriers to use associated with functional utility, and a separate "socially disenfranchised" set of non-users who perceive both social barriers to being on social media, and social consequences of being off it. Those socially disenfranchised individuals were often concerned about offending others and making the right choices in social interactions. This aligns with our interviewees who viewed privacy features as relational hindrance, perceiving social barriers to using privacy features, as well as experiencing social consequences by not using those features. Similarly, we see the relevance to designing for privacy of vulnerable populations, such as survivors of intimate partner abuse (e.g., [24]). The importance of social support and connection in such populations may lead to attitudes similar to the users who viewed the use of privacy features as a relational hindrance, or even a danger to their well-being and safety. As social media increasingly mediates social interactions and shapes our personal relationships, it becomes vital to support privacy management for such vulnerable users who could easily be overlooked.

5.3 Limitations and Future Work

A strength of our work is that we took a mixed-methods approach to first qualitative identify and understand two different social media privacy attitudes. Then, we quantitatively confirmed our findings through a larger-scale survey study across four popular social media platforms. However, there were some limitations to our study that should be addressed in future work. For instance, interview participants mentioned other privacy features beyond those represented in this paper; yet, these did not clearly align with the two privacy attitudes. For example,

interviewees from both perspectives discussed rejecting friend requests from strangers (although more pragmatic individuals would also reject friend requests from people they knew). Given that they both reject friend requests, the attitudes were not distinguishable for this boundary mechanism. Indeed, our results show that use of this feature was not significantly related to either attitude. Future work could explore these other social media behaviors, boundary mechanisms, and attitudes to understand if and why some may trigger social concerns while others do not. Additionally, we saw some differences in attitudes across social media platforms, specifically for LinkedIn. Therefore, future work should follow up on this difference to see whether it holds true with a larger sample size. Finally, some participants did not ascribe to either attitude or to both; this suggests that other social media privacy perspectives, or folk models, may exist but have yet to be identified.

6 CONCLUSION

This work takes an important step towards understanding different attitudes towards social media that impact privacy and other social media behaviors. In doing so, we identify a group of users who feel that using existing social media boundary mechanisms would hinder their relationships with others. Therefore, they were hesitant to use these privacy behaviors. To better understand privacy needs, we encourage researchers to look beyond viewing privacy as a straightforward trade-off between the benefits and drawbacks of self-disclosure. Our findings illustrate that it is important to strive for the right balance in social connection and avoid social crowding on the one hand, but also preventing social isolation on the other.

ACKNOWLEDGEMENTS

This work was supported by the Bentley Research Council. The interview portion of this research draws from data collected in context of a broader study conducted in collaboration with Marco Marabelli – we thank him for his support!

REFERENCES

- [1] Norah Abokhodair and Sarah Vieweg. 2016. Privacy & Social Media in the Context of the Arab Gulf. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems (DIS '16)*, 672–683. <https://doi.org/10.1145/2901790.2901873>
- [2] Alessandro Acquisti and Jens Grossklags. 2008. What Can Behavioral Economics Teach Us About Privacy? *Digital Privacy: Theory, Technologies, and Practices*: 363–377.
- [3] Irwin Altman. 1975. *The Environment and Social Behavior: Privacy, Personal Space, Territory, and Crowding*. Brooks/Cole Publishing, Monterey, CA.
- [4] Susan B. Barnes. 2006. A privacy paradox: Social networking in the United States. *First Monday* 11, 9. <https://doi.org/10.5210/fm.v11i9.1394>
- [5] Lemi Baruh, Ekin Secinti, and Zeynep Cemalcilar. 2017. Online Privacy Concerns and Privacy Management: A Meta-Analytical Review. *Journal of Communication* 67, 1: 26–53. <https://doi.org/10.1111/jcom.12276>
- [6] Eric P.S. Baumer, Phil Adams, Vera D. Khovanskaya, Tony C. Liao, Madeline E. Smith, Victoria Schwanda Sosik, and Kaiton Williams. 2013. Limiting, Leaving, and (Re)Lapsing: An Exploration of Facebook Non-use Practices and Experiences. In *Proceedings of the SIGCHI conference on human factors in computing systems (CHI '13)*, 3257–3266. <https://doi.org/10.1145/2470654.2466446>
- [7] Berryman, C., McHugh, B., Wisniewski, P., Ferguson, C., and Negy, C. 2019. Can't Even Say It! User Characteristics of Vaguebookers Versus General Social Media Users. In *Proceedings of the 21st International Conference on Human-Computer Interaction*.
- [8] Chloe Berryman, Christopher J. Ferguson, and Charles Negy. 2018. Social Media Use and Mental Health among Young Adults. *The Psychiatric Quarterly* 89, 2: 307–314. <https://doi.org/10.1007/s11126-017-9535-6>

- [9] Joseph Bonneau and Sören Preibusch. 2010. The Privacy Jungle: On the Market for Data Protection in Social Networks. In *Economics of Information Security and Privacy*, Tyler Moore, David Pym and Christos Ioannidis (eds.). Springer US, New York, NY, 121–167. Retrieved June 4, 2012 from [10.1007/978-1-4419-6967-5_8](https://doi.org/10.1007/978-1-4419-6967-5_8)
- [10] Tom Buchanan, Carina Paine, Adam N. Joinson, and Ulf-Dietrich Reips. 2007. Development of Measures of Online Privacy Concern and Protection for Use on the Internet. *Journal of the American Society for Information Science & Technology* 58, 2: 157–165. <https://doi.org/10.1002/asi.20459>
- [11] Christoph Buck, Simone Burster, and Torsten Eymann. 2017. *Priming app information privacy concerns in mobile ecosystems*. Bayreuther Arbeitspapiere zur Wirtschaftsinformatik. Retrieved April 3, 2019 from <https://www.econstor.eu/handle/10419/172465>
- [12] Nicole B. Ellison, Charles Steinfield, and Cliff Lampe. 2007. The Benefits of Facebook “Friends:” Social Capital and College Students’ Use of Online Social Network Sites. *Journal of Computer-Mediated Communication* 12, 4: 1143–1168. <https://doi.org/10.1111/j.1083-6101.2007.00367.x>
- [13] Nicole B. Ellison, Jessica Vitak, Rebecca Gray, and Cliff Lampe. 2014. Cultivating Social Resources on Social Network Sites: Facebook Relationship Maintenance Behaviors and Their Role in Social Capital Processes. *Journal of Computer-Mediated Communication* 19, 4: 855–870. <https://doi.org/10.1111/jcc4.12078>
- [14] Casey Fiesler, Michaelanne Dye, Jessica L. Feuston, Chaya Hiruncharoenvate, C.J. Hutto, Shannon Morrison, Parisa Khanipour Roshan, Umashanthi Pavalanathan, Amy S. Bruckman, Munmun De Choudhury, and Eric Gilbert. 2017. What (or Who) Is Public?: Privacy Settings and Social Media Content Sharing. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW ’17)*, 567–580. <https://doi.org/10.1145/2998181.2998223>
- [15] Nina Gerber, Paul Gerber, and Melanie Volkamer. 2018. Explaining the privacy paradox: A systematic review of literature investigating privacy attitude and behavior. *Computers & Security* 77: 226–261. <https://doi.org/10.1016/j.cose.2018.04.002>
- [16] Kevin Granville. 2018. Facebook and Cambridge Analytica: What You Need to Know as Fallout Widens. *The New York Times*. Retrieved March 22, 2018 from <https://www.nytimes.com/2018/03/19/technology/facebook-cambridge-analytica-explained.html>
- [17] Bart P. Knijnenburg, Elaine M. Raybourn, David Cherry, Daricia Wilkinson, Saadhika Sivakumar, and Henry Sloan. 2017. *Death to the Privacy Calculus?* Rochester, NY. Retrieved March 7, 2017 from <https://papers.ssrn.com/abstract=2923806>
- [18] Hanna Krasnova, Elena Kolesnikova, and Oliver Guenther. 2009. “It Won’t Happen To Me!”: Self-Disclosure in Online Social Networks.
- [19] Airi Lampinen, Vilma Lehtinen, Asko Lehmuskallio, and Sakari Tamminen. 2011. We’re in It Together: Interpersonal Management of Disclosure in Social Network Services.
- [20] Robert S. Laufer and Maxine Wolfe. 2010. Privacy as a Concept and a Social Issue: A Multidimensional Developmental Theory. *Journal of Social Issues* 33, 3: 22–42. <https://doi.org/10.1111/j.1540-4560.1977.tb01880.x>
- [21] Yao Li, Alfred Kobsa, Bart P. Knijnenburg, and M-H. Carolyn Nguyen. 2017. Cross-Cultural Privacy Prediction. *Proceedings on Privacy Enhancing Technologies* 3, 2.
- [22] Heather Richter Lipford, Pamela Wisniewski, Cliff Lampe, Lorraine Kisselburgh, and Kelly Caine. 2012. Reconciling Privacy and Social Media.
- [23] Naresh K. Malhotra, Sung S. Kim, and James Agarwal. 2004. Internet Users’ Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model. *Info. Sys. Research* 15, 4: 336–355.
- [24] Tara Matthews, Kathleen O’Leary, Anna Turner, Manya Sleeper, Jill Palzkill Woelfer, Martin Shelton, Cori Manthorne, Elizabeth F. Churchill, and Sunny Consolvo. 2017. Stories from Survivors: Privacy & Security Practices when Coping with Intimate Partner Abuse. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI ’17)*, 2189–2201. <https://doi.org/10.1145/3025453.3025875>
- [25] Barbara M. Newman and Philip R. Newman. 2017. *Development Through Life: A Psychosocial Approach*. Cengage Learning, Boston, MA.
- [26] Helen Nissenbaum. 2004. Privacy as Contextual Integrity. *Washington Law Review* 79, 1: 119–158.
- [27] Patricia A. Norberg, Daniel R. Horne, and David A. Horne. 2007. The Privacy Paradox: Personal Information Disclosure Intentions versus Behaviors. *Journal of Consumer Affairs* 41, 1: 100–126. <https://doi.org/10.1111/j.1745-6606.2006.00070.x>
- [28] Xinru Page, Bart P. Knijnenburg, and Alfred Kobsa. 2013. FYI: communication style preferences underlie differences in location-sharing adoption and usage. In *Proceedings of the 2013 ACM international joint conference on Pervasive and ubiquitous computing (UbiComp ’13)*, 153–162. <https://doi.org/10.1145/2493432.2493487>
- [29] Xinru Page and Marco Marabelli. 2017. Changes in Social Media Behavior During Life Periods of Uncertainty. In *Proceedings of the Eleventh International AAAI Conference on Weblogs and Social Media*.
- [30] Xinru Page, Pamela Wisniewski, Bart P. Knijnenburg, and Moses Namara. 2018. Social Media’s Have-Nots: An Era of Social Disenfranchisement. *Internet Research: 00–00*. <https://doi.org/10.1108/IntR-03-2017-0123>

- [31] Leysia Palen and Paul Dourish. 2003. Unpacking “Privacy” for a Networked World. In *Proceedings of the 2003 CHI Conference on Human Factors in Computing Systems*, 129–136. <https://doi.org/10.1145/642611.642635>
- [32] Sandra Sporbett Petronio. 2002. *Boundaries of Privacy: Dialects of Disclosure*. SUNY Press.
- [33] Lee Rainie. 2018. Americans’ complicated feelings about social media in an era of privacy concerns. *Pew Research Center*. Retrieved September 16, 2018 from <http://www.pewresearch.org/fact-tank/2018/03/27/americans-complicated-feelings-about-social-media-in-an-era-of-privacy-concerns/>
- [34] Lauren Scissors, Moira Burke, and Steven Wengrovitz. 2016. What’s in a Like?: Attitudes and Behaviors Around Receiving Likes on Facebook. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW ’16)*, 1501–1510. <https://doi.org/10.1145/2818048.2820066>
- [35] Aaron Smith, Monica, and erson. 2018. Social Media Use in 2018. *Pew Research Center: Internet, Science & Tech*. Retrieved September 16, 2018 from <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>
- [36] Charles Steinfield, Nicole B. Ellison, and Cliff Lampe. 2008. Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology* 29, 6: 434–445. <https://doi.org/10.1016/j.appdev.2008.07.002>
- [37] Fred Stutzman and Woodrow Hartzog. 2012. Boundary Regulation in Social Media. In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work (CSCW ’12)*, 769–778.
- [38] Fred Stutzman, Jessica Vitak, Nicole B. Ellison, Rebecca Gray, and Cliff Lampe. 2012. Privacy in Interaction: Exploring Disclosure and Social Capital in Facebook.
- [39] Mina Tsay-Vogel, James Shanahan, and Nancy Signorielli. 2018. Social media cultivating perceptions of privacy: A 5-year analysis of privacy attitudes and self-disclosure behaviors among Facebook users. *New Media & Society* 20, 1: 141–161. <https://doi.org/10.1177/1461444816660731>
- [40] Zeynep Tufekci. 2008. Can You See Me Now? Audience and Disclosure Regulation in Online Social Network Sites. *Bulletin of Science, Technology & Society* 28, 1: 20–36.
- [41] Jessica Vitak and Jinyoung Kim. 2014. “You Can’T Block People Offline”: Examining How Facebook’s Affordances Shape the Disclosure Process. In *Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW ’14)*, 461–474. <https://doi.org/10.1145/2531602.2531672>
- [42] Rick Wash. 2010. Folk Models of Home Computer Security. In *Proceedings of the Sixth Symposium on Usable Privacy and Security (SOUPS ’10)*, 11:1–11:16. <https://doi.org/10.1145/1837110.1837125>
- [43] Alan Westin, Louis Harris, and others. 1991. Equifax-Harris consumer privacy survey. *Conducted for Equifax Inc*.
- [44] Darcia Wilkinson, Moses Namara, Karla Badillo-Urquiola, Pamela J. Wisniewski, Bart P. Knijnenburg, Xinru Page, Eran Toch, and Jen Romano-Bergstrom. 2018. Moving Beyond a “One-size Fits All”: Exploring Individual Differences in Privacy. In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA ’18)*, W16:1–W16:8. <https://doi.org/10.1145/3170427.3170617>
- [45] Darcia Wilkinson, Saadhika Sivakumar, David Cherry, Bart P. Knijnenburg, Elaine M. Raybourn, Pamela Wisniewski, and Henry Sloan. 2017. User-Tailored Privacy by Design. In *Proceedings of the Usable Security Mini Conference 2017*. <http://dx.doi.org/10.14722/usec.2017.23007>
- [46] Pamela Wisniewski, A. K. M. Islam, Heather Richter Lipford, and David Wilson. 2016. Framing and Measuring Multi-dimensional Interpersonal Privacy Preferences of Social Networking Site Users. *Communications of the Association for Information Systems* 38, 1. Retrieved from <http://aisel.aisnet.org/cais/vol38/iss1/10>
- [47] Pamela Wisniewski, A.K.M. Najmul Islam, Bart P. Knijnenburg, and Sameer Patil. 2015. Give Social Network Users the Privacy They Want. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW ’15)*, 1427–1441. <https://doi.org/10.1145/2675133.2675256>
- [48] Pamela J. Wisniewski, Bart P. Knijnenburg, and Heather Richter Lipford. 2017. Making privacy personal: Profiling social network users to inform privacy education and nudging. *International Journal of Human-Computer Studies* 98: 95–108.
- [49] Pamela Wisniewski, Heather Lipford, and David Wilson. 2012. Fighting for My Space: Coping Mechanisms for Sns Boundary Regulation. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI ’12)*, 609–618. <https://doi.org/10.1145/2207676.2207761>
- [50] Pamela Wisniewski, Jessica Vitak, Xinru Page, Bart Knijnenburg, Yang Wang, and Casey Fiesler. 2017. In Whose Best Interest?: Exploring the Real, Potential, and Imagined Ethical Concerns in Privacy-Focused Agenda. In *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW ’17 Companion)*, 377–382. <https://doi.org/10.1145/3022198.3022660>
- [51] Heng Xu, Rachida Parks, Chao Hsien Chu, & Xiaolong Luke Zhang. 2010. Information disclosure and online social networks: From the case of Facebook news feed controversy to a theoretical understanding.

Received April 2019; revised June 2019; accepted August 2019.