A Cross-Cultural Framework for Protecting User Privacy in Online Social Media

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ABSTRACT

Social media has become truly global in recent years. We argue that support for users' privacy, however, has not been extended equally to all users from around the world. In this paper, we survey existing literature on cross-cultural privacy issues, giving particular weight to work specific to online social networking sites. We then propose a framework for evaluating the extent to which social networking sites' privacy options are offered and communicated in a manner that supports diverse users from around the world. One aspect of our framework focuses on cultural issues, such as norms regarding the use of pseudonyms or posting of photographs. A second aspect of our framework discusses legal issues in cross-cultural privacy, including data-protection requirements and questions of jurisdiction. The final part of our framework delves into user expectations regarding the data-sharing practices and the communication of privacy information. The framework can enable service providers to identify potential gaps in support for user privacy. It can also help researchers, regulators, or consumer advocates reason systematically about cultural differences related to privacy in social media.

Categories and Subject Descriptors

K.4.1 [**COMPUTERS AND SOCIETY**]: Public Policy Issues-Privacy

General Terms

Human Factors, Legal Aspects, Security

Keywords

Cross-cultural; Privacy; Social Networks; Social Media; Culture

1. INTRODUCTION

Just one decade ago, social networking sites and other forms of social media were primarily local phenomena. Although the main ideas behind social networking had begun to take hold, Facebook would be founded in 2004 initially for affiliates of Harvard University, sites like Friendster and MySpace had just begun to receive attention from academia [8], and localized social networks covered much of the rest of the world, from Cyworld in South Korea to iWiW in Hungary [39]. Each social networking site had its own idiosyncrasies, norms, and interface affordances.

As of 2013, however, the landscape has become substantially more homogenized. A few localized sites continue to lead social networking in certain markets, including Qzone in China and VK in Russia [39], yet much of the rest of the world is on Facebook [6]. Given this global reach, sites like Facebook and Twitter now impact the social lives of a large and diverse group of individuals from many different countries and cultures.

Although users have coalesced around a handful of global social networking sites, what it means to support privacy in social media across cultures, for users from diverse backgrounds, remains an open question. Users from around the world bring with them variegated backgrounds and expectations, different cultural norms, and experiences shaped by growing up under contrasting legal frameworks. Social networking sites, however, generally enact one-size-fits-all policies and practices.

Unfortunately, academic work on cross-cultural privacy issues, particularly in social media, remains limited. Many of the past studies of cross-cultural privacy issues have focused narrowly on a handful of phenomena in only one or two different countries, and the paucity of reliable data has been compounded by the preponderance of pilot studies and other small-scale studies in the field [55].

In this paper, we seek to craft a unified view of the necessary components for supporting privacy in social media across cultures. We review the literature on cross-cultural privacy issues in technology, focusing on studies related to social media. For each study, we highlight key elements identified as crucial to participants' conceptions of privacy. We then synthesize these lessons into a proposed framework for evaluating cross-cultural support of privacy in social media, identifying three key areas of concern: cultural norms; legal and jurisdictional frameworks; and user expectations.

We begin in Section 2 by highlighting prior work on abstract differences across cultures, discussing some of the difficulties in generalizing about such a nuanced topic. We then review the literature on cross-cultural privacy issues in social media in three parts, mirroring our proposed framework. We first focus on studies whose main findings concern cultural norms and information sharing in Section 3. Afterwards, in Section 4, we discuss legal issues surrounding cross-cultural privacy. In Section 5, we then discuss differences in user expectations. We propose and discuss our unified framework in Section 6, noting applications for the framework and challenges in studying privacy across cultures.

2. BACKGROUND

When considering cross-cultural elements of privacy, the sheer complexity of precisely defining the terms "privacy" and "culture" loom large. Although both of these terms are loaded, conceptualizing culture in this context is particularly problematic. The common simplification we adopt is to use national origin as a weak proxy for culture, ignoring diasporas, expatriates, fluid boundaries, mixed national demographics, and shared experience due to technology.

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Even within a single country, demographic differences including race and ethnicity impact usage of social networking sites [22, 23]. Despite coarsely equating culture and national origin, questions remain about whether and how cultures differ.

Much of the past work in cross-cultural issues in social media [56] has used Hofstede's cultural dimensions [25] to frame cultural differences. Hofstede investigated cultural differences in the corporate domain, distributing over 100,000 questionnaires across IBM's global subsidiaries. He initially characterized cultural differences across four dimensions: power distance, individualism, uncertainty avoidance, and masculinity. In later work [26], he added long-term orientation as a fifth dimension. Although his cultural dimensions have been widely cited, they have also been criticized for being implausible generalizations [38], pigeonholing individuals into false dichotomies [57], and being blind to the unifying factor of technology [30], among others.

In this paper, we consciously choose not to apply Hofstede's cultural dimensions in generating our framework. We do not wish to generalize about a certain group's characteristics and then make potentially tenuous claims about how these generalizations could be expected to impact privacy attitudes and behaviors. Instead, we generate a framework of privacy questions and concerns identified fairly directly in past empirical work as impacting some aspect of privacy in one or more cultures.

Before focusing specifically on privacy in social media, it is helpful to consider past work comparing technology use and privacy across cultures. A handful of authors have conducted large-scale surveys to measure suspected differences empirically. For instance, Milberg et al. used Hofstede's dimensions as part of their theoretical basis and surveyed 900 individuals across nine countries about privacy concerns in 1995. Unfortunately, all study participants were members of a technology professional association [40]. While noting these limitations, the authors found significant differences in privacy concerns across cultures. Nearly a decade later, Bellman et al. took a different approach by using contrasts in national privacy regulation as their starting point [5]. They sampled individuals from 38 different countries, comparing their survey responses to American participants' responses. They found differences across cultures based both on conflicting cultural values, as well as differing exposures to Internet technologies. They concluded by recommending the adoption of localized privacy policies. Five years after Bellman et al., Cho et al. surveyed 1,261 Internet users from five cities: Bangalore, Seoul, Singapore, Sydney, and New York [16]. They found that differences between national cultures, as well as differences between individuals, influenced Internet privacy concerns. Like Milberg et al., Cho et al. used Hofstede's cultural dimensions as a starting point.

Others have questioned, to some degree, the extent to which cultural factors alone could explain differences they observed. For instance, Ifinedo found that cultural factors were insufficient for explaining differences across countries in a global survey of financial service institutions [27]. Antón et al. performed a longitudinal study of Americans' Internet privacy concerns over a period of six years [4]. The authors noted a sharp evolution in Americans' privacy concerns away from issues of information storage and information transfer. In the latter stage of this longitudinal study, they also surveyed international respondents, finding that Americans and non-Americans shared the same privacy concerns, yet ranked these concerns differently.

Since this prior research does not present a clear and consistent picture of how cultures differ nor how cultures affect people's privacy conception, we choose not to make any a priori theoretical assumptions. These prior findings also suggest that we need to look beyond "culture" for causes of cross-cultural differences in privacy. We will next discuss the three main areas of our framework, which is solely grounded in prior empirical research on privacy across cultures. The main dimensions that emerged from this prior research were cultural norms, legal issues, and user expectations.

3. PART 1: CULTURAL NORMS

The first of three streams of privacy concerns we identified in the literature relate to cultural norms in a particular country. The authors of these empirical studies claim that cultural factors unique to a nation with which they are familiar deeply affect attitudes toward privacy, or even the conception of privacy itself, for members of that culture. These empirical studies mirror privacy theory; for instance, Petronio included culture among the factors that influence how people manage privacy boundaries, arguing that "people are socialized into certain norms for privacy in their culture and those norms are basic to the way they conceive of privacy" [46].

We begin on a more abstract level, briefly examining how researchers believe different cultures define privacy. This issue is of particular interest regarding the relative sensitivity of different types of personal information in each culture. A number of authors have compared aspects of Western and Eastern culture to argue that fundamental ideas about privacy differ between regions. For instance, Nakada and Tamura traced Japanese culture to its purported sources, arguing that this lineage has led to contradictory Japanese attitudes towards privacy [43]. Adams et al. attempted to debunk the myth that Japanese society lacks a conception of privacy, distinguishing between information privacy and physical privacy [1]. They argued that the former concept is alive and well in Japanese society, whereas the latter construct arguably does not exist. Similarly, Mizutani et al. claimed that myths surrounding a Japanese lack of privacy are untrue, carefully delineating unique Japanese approaches to privacy [41]. The Chinese conception of privacy has also been investigated by a number of authors. For example, Yao-Huai argued that modern Chinese privacy attitudes are a confluence of individualistic Western approaches to privacy and traditional Chinese ideas of the family and the state as central powers [61]. Ess argued that differences between East and West in the conception of the self influence privacy as a philosophical construct [20].

Along with East Asia, South Asia has begun to receive research attention in recent years. Kumaraguru and Cranor conducted an exploratory study of privacy in India via 29 one-on-one interviews and 407 survey responses [35]. They found a number of conceptions of privacy in India that differed sharply from norms in the United States. Participants were less concerned with providing personal health information online when compared to American cohorts in similar surveys, and they generally had a lower degree of privacy concern. Furthermore, Indian participants displayed a high degree of trust in businesses and government organizations that collect personal information. The authors also discussed general privacy norms in India that would be surprising to Westerners, such as publicly posting university grades or detailed information about individuals who have made train reservations. Patil et al. largely confirmed these findings, yet also found a high degree of interpersonal privacy concern among knowledge workers in India relative to those in the United States [44].

In followup work, Kumaraguru and Sachdeva used interviews, focus groups, and over 10,000 survey responses to investigate these phenomena on an even larger scale [36]. They found religion and mobile phone numbers, like health information, to be less privacy sensitive for Indian respondents than Westerners might anticipate. Marshall et al. surveyed 245 Indian undergraduates and 241 Amer-

ican undergraduates about their privacy attitudes regarding online social networking sites [37]. They found that many of their results contradicted hypotheses they made based on Hofstede's work. For instance, Indian participants expressed lower levels of privacy concern and were more likely to interact with strangers.

3.1 Photo Sharing

Looking more closely at the domain of social media, a handful of researchers have conducted empirical studies that have identified key differences between cultures in a small number of privacy behaviors. Photo-sharing practices are one of the most salient. Some of this work has examined the types of profile photos users choose as their public depiction or avatar. For instance, Zhao and Jiang analyzed public profile images used by 57 Facebook users in the United States and 57 Renren users in China, finding Chinese users to be more likely to "customize" their profile image by adding digital effects or using a picture depicting something other than the user, such as art [66]. In contrast to Chinese participants, who all used either customized photos or individual photos, 35% of American participants used group photos for their profile image.

Other studies have found differences in photo-sharing behaviors on social networking sites. Rui and Stefanone surveyed 250 American and 162 Singaporean users of social networking sites [51]. They found that users from Singapore tended to share a greater number of photos, whereas American users were more likely to engage in protective management of photo tags (e.g., by untagging themselves from a photo) and also posted text to their Facebook walls more often. Peters et al. sought to compare American users of Facebook with Namibian Facebook users [45]. Along with analyzing the content participants in the study had posted to Facebook, the authors interviewed ten Namibian users of Facebook, ten Namibian expatriates in the U.S., and ten Americans. They found that Namibians differed from American users in the way they posted photographs; Namibian participants said that individuals, rather than landscapes, were generally the main focus of photographs, and that an individual's physical appearance was crucial. Ur and Wang interviewed 19 Hungarian users of Facebook and iWiW, a localized social networking site [54]. They found that participants over the age of 30 tended not to share much information on online social networking sites, and that these older participants expressed particular reluctance to share photos of themselves. This feeling was strong enough that some participants deliberately chose not to have any sort of profile photo. Interestingly, a number of participants attributed this reluctance to the chilling effect of growing up under communism, where evidence of an individual's actions could be used against him or her.

Multiple studies in India have also investigated photo sharing. In a large-scale study of privacy in India, Kumaraguru and Sachdeva found that users felt photographs to be the most privacy-sensitive element posted on social networking sites [36]. Marshall et al. found significant differences in the proportion of survey participants from India and the U.S. that had posted photos of themselves (68.6% of Indian participants, versus 95.4% of American participants) and of friends (52.4% of Indian participants, versus 91.3% of American participants) [37]. Unfortunately, they did not unpack whether the reason for these differences was an issue of longstanding cultural norms, unequal access to cameras, or cultural tendencies specific to the use of social media.

Interestingly, Facebook employees have noted that the reasons Facebook users flag photos as inappropriate vary across cultures, such as flagging unflattering photos (common in the U.S.) and flagging photoshopped photos of celebrities or politicians (common in India) [52]. This sort of behavior has resulted in Facebook displaying different interfaces for flagging inappropriate photos in different countries, providing one of the limited examples of a social networking site adapting its affordances to particular cultures.

3.2 Information Revelation

Commonly, studies have investigated what particular types of information are considered sensitive in a particular culture. For example, Karl et al. surveyed 433 undergraduates in the U.S. and 304 undergraduates in Germany about the types of information they included in their social networking profiles [31]. They asked about information typically included in profiles, such as favorite music, and also potentially regrettable information, such as nude photos and posts about illegal drugs. Although very few respondents from either nation said they would post some of the information that might be most regrettable, American respondents were more likely to post information that might be problematic, such as comments about sexual activities or regarding alcohol use. More generally, in a survey of 200 American and 144 Chinese students, Chen found Americans to disclose more personal information overall [14].

Al Omoush et al. attempted to understand Facebook from the unique perspective of the Arab world, drawing heavily from Hofstede in doing so [3]. They used snowball sampling to gather survey responses from 749 Arab users of Facebook, where the exact meaning of Arab is left ambiguous. They found a stark influence of what are claimed to be Arab values in social networking. Friedman et al. studied perceptions of privacy in public places in Sweden by replicating a previous study that had focused on the United States [21]. Through 350 surveys and 30 interviews of Swedish users, they found Swedes to display a greater degree of privacy concern than American respondents. As part of their discussion, they advocated for a culturally sensitive approach to interaction design.

Unfortunately, since many studies of cross-cultural privacy in social networking examine small populations using different methodologies in a very small number of countries, it becomes difficult to compare across cultures. To gain a full understanding of the relative concerns social networking users from different cultures express about potentially sensitive information related to topics like sex, religion, and politics, broader studies are necessary.

3.3 Pseudonyms

Pseudonyms have also been observed as a crucial element of cultural differences in social media privacy. For instance, Wang et al. surveyed 924 social networking site users from China, India, and the United States, finding differences across these cultures [58]. In particular, users from China noted major concerns about the use of fake identities and pseudonyms, and American respondents were the most privacy-concerned despite stating the lowest desire to restrict their information on these sites. Chen et al. surveyed individuals in both Taiwan and the United States about the role of anonymity and pseudonyms in privacy [15]. They claim that Taiwanese study participants did not demand more stringent privacy rights in an email environment due in part to cultural differences.

On the flip side of the coin, some researchers have argued in favor of the importance of pseudonyms for privacy. boyd recaps the development of tension between real names and pseudonyms on Facebook and Google+ [9]. She argues that the use of real names on Facebook in its early days as a university-centric network was both a natural extension of social norms on campus and a response to the pervasive use of pseudonyms on MySpace. Although requiring individuals to use their real names remained Facebook's official policy as its audience expanded rapidly, it did not enforce this policy. In contrast, Google+ both required and actively enforced the use of real names when it started, suspending pseudonymous ac-

counts before eventually relenting to allow the use of pseudonyms. boyd argues that the easy availability of data through search shifts power away from the individual in online interactions, whereas the individual has substantial control over his or her self-presentation in face-to-face interaction. Although boyd does not explicitly discuss pseudonymity in the context of cross-cultural values, the strong relationship she identifies between pseudonymity and societal norms can easily be extended to the cross-cultural context.

Surprisingly, little has been written about the use of pseudonyms in different cultures, which might be presumed to be an essential part of political or social activism. For all of the news coverage that has pegged the Arab Spring as a Twitter revolution, with or without justification, the cross-cultural elements of pseudonymity and privacy in interaction with politics have yet to receive significant research attention.

3.4 Network Structure

Cultural norms regarding the structure of social networks have also been studied as a possible factor in privacy differences. Rosen et al. surveyed 452 young adults, letting participants self-identify with different cultural backgrounds [50]. They then used Hofstede's cultural dimensions to explain their results. They found that individuals identifying with cultures that Hofstede deemed individualistic tended to have a larger set of online friends. Cardon et al. surveyed 1,186 social networking users in 11 different countries, asking questions primarily about the structure of users' online and offline friend networks [11]. They also based their analysis on Hofstede's cultural dimensions. In contrast, they found no significant differences in the number of online friends based on the "individualness" or "colletiveness" of a culture. They did, however, find that users of online social networking sites in "individualist" nations tended to have a larger number of offline friends, yet fewer online friends whom they have never met in person.

3.5 Communication Patterns

Alongside the structure of social networks, communication patterns have been the subject of research in recent years. For instance, Yuki et al. conducted both a questionnaire and an online money allocation game to compare American and Japanese subjects' trust in particular relationships and in group scenarios [63]. They found that Americans trusted ingroup members more than outgroup members, whereas Japanese participants had relatively higher trust in outgroup members. Reinecke et al. examined 1.5 million online scheduling polls from 211 countries on the website Doodle, finding correlations between purported national characteristics and both the time at which users responded to Doodle polls, as well as the number of options they chose [48]. Zhao et al. found that the mode of communication and relationship between parties interacted with national identity in a study of willingness to disclose information [65]. They ran a scenario-based survey of 1,064 respondents in China and the U.S., finding that American respondents were generally more willing than Chinese respondents to disclose information to coworkers and to disclose more information in face-to-face communication than in online communication.

3.6 Other

Given the paucity of literature examining cross-cultural privacy issues in social media, some topics that intuition might suggest would have a large impact on privacy behaviors have yet to be studied deeply. For instance, it seems that the rate of technology adoption could be an important factor in a culture's use of technology [30]. Initial work has studied users' apprehensiveness in adapting to new technologies. Yoo and Huang surveyed 183 American and Korean undergraduates regarding their adoption of Web 2.0 technologies, including Skype and Facebook [62]. They found Korean participants to be much more apprehensive than American participants in adopting new technologies.

The use of symbols, images, and patterns for communication have also seen less research than might be expected. Slightly outside the domain of social media, some authors began looking at this phenomenon among virtual worlds. Adopting the premise that virtual worlds are fundamentally dominated by Western culture, Yusof and Zakaria examined virtual worlds from an Islamic perspective [64]. They discuss the importance of enabling culturally appropriate imagery, iconography, and communication patterns in virtual worlds in order to mirror norms in Islamic society.

4. PART 2: LEGAL CONCERNS

The legal framework for privacy differs around the world, impacting social media. The idea of privacy in the European Union has been legislated to a great degree, and many questions about privacy fall under the aegis of each E.U. member state's data protection authority [10]. These data protection authorities have challenged Facebook over its real-name policies [17] and challenged Google over changes to its privacy policy that allow it to combine information from different services, including Google+ [42]. Concepts under current debate, such as a European individual's potential "right to be forgotten" by having their data removed upon request [59], also might prove a boon to personal privacy, yet the interaction of this concept with free speech is uncertain. The impact of legal protections on user attitudes has been explored only superficially. For instance, Röcker studied the disclosure of context information (e.g., sensor readings) in smart office environments between Germans and Americans, finding Americans to be more willing to share information than Germans [49]. Röcker hypothesized that this difference may be due to an increased German awareness of the consequences of data misuse, as characterized by the European Union's strict data-protection laws.

Privacy in the United States is not governed by legal writ to the same degree as in the European Union. Instead, privacy practices are policed in the U.S. in a reactive manner by organizations like the Federal Trade Commission, which investigates corporate privacy behaviors that are potentially unfair or deceptive.

Over forty countries around the world have enacted major data protection laws [10]. Of course, in a world with around 200 countries, much work remains, even for countries with a legal framework for privacy. Caruana and Cannataci compared privacy protections in the European Union with those provided by Islamic states [12], finding the E.U. to be substantially more privacy protective. Wu et al. compared privacy in China and the United States from a legal and regulatory perspective [60]. They found that, until recently, Chinese law only considered privacy among the elements of a "right to reputation" in civil law, rather than on its own. Yao-Huai also notes that, prior to recent changes, the only data protection laws in China had been local laws [61]. Kumaraguru and Sachdeva note that India lacks legal protections for privacy [36].

A number of legal issues surrounding the rights of photographers, the definitions of slander and libel, and the ownership of information also tie in deeply with cross-cultural privacy issues on social networking sites. While these issues are much too complex for a detailed treatment in this paper, the great extent to which individuals post information and photographs about other individuals on Facebook raises many legal questions. One can argue that liberal interpretations of these laws might imperil the privacy of individuals whose information is being shared without their consent,

whereas conservative interpretations might have a chilling effect on the diffusion of information.

Surprisingly, questions of social networking sites' jurisdiction have not been well explored in the literature. Approaches to jurisdiction seem to vary by provider. For instance, Twitter's privacy policy lists the contact information for its U.S. headquarters to users from around the world, while Facebook lists Facebook Ireland in its privacy policy for most users outside the United States. From a user perspective, it may be unclear to whom these sites are responsible, and what steps the user should take to exert any legal rights.

The relationship between a social media provider and law enforcement can also be opaque to users. This relationship is of particular relevance because sites like Facebook often do provide information in response to law-enforcement requests [24]. This opacity can lead users to draw interesting conclusions. For instance, in interviews of Hungarian Facebook users, Ur and Wang found that some participants expected Facebook to share data from all users globally with the U.S. government as a form of international spying, echoing rumors these users articulated about Hungarian social network iWiW providing data to the Hungarian government [54].

5. PART 3: USER EXPECTATIONS

Users' expectations for privacy and for interaction in social media form the crucial third pillar of our privacy framework. These expectations range from abstract goals and trust in a provider to expectations for the accessibility of information based on language.

5.1 Goals

Users' expectations and goals for a particular service can influence privacy, particularly in the types of information that they share on a site. For instance, Chapman and Lahav interviewed a total of 36 users of social networking sites in China, France, South Korea, and the United States [13]. They found differences in participants' basic goals for using the sites. For instance, American participants commonly expressed a desire to broadcast information about themselves, Chinese participants particularly enjoyed gaming and personalizing their pages through decoration, and South Korean participants used social networking primarily to share photos.

Krasnova and Veltri focused on users' anticipated benefits and perceived risks in a 2010 survey of 138 German and 193 American Facebook users [34]. Their American participants found more benefit in the use of Facebook, including staying in touch with existing friends and cultivating new relationships, yet expressed greater privacy concerns regarding the information they post to Facebook. Although they expressed a lower degree of privacy concern than the American respondents, the German respondents attributed a higher degree of damage to adverse events regarding information sharing on Facebook, such as the sharing of Facebook information with employers or governmental agencies. Even within a single culture, users sometimes differ in their goals for using social media. For instance, Correa and Jeong studied how college students of different ethnicities participate in the user-generated web, finding that students of different ethnicities articulated goals like self-expression and self-promotion at different rates [18].

5.2 Trust and Expectation

Users' trust in institutions also helps to influence expectations. For instance, Krasnova and Veltri found that their German survey respondents had a lower degree of trust in Facebook than their American respondents, yet no significant differences were observed regarding trust in other Facebook users [34]. The German respondents were similarly more likely than American respondents to believe that the information they provide on Facebook would be shared with employers and government agencies, or for commercial purposes. More broadly, Cullen investigated Japan in comparison to New Zealand [19]. She found respondents from New Zealand to have greater trust in government and fewer information privacy concerns than corresponding Japanese respondents, leading her to search for cultural factors that might explain this difference. Al-Hamar et al. stated that a Qatari culture of trust threatens security and privacy [2]. Kitiyadisai claimed that Buddhist values thoroughly influence Thai individuals' understanding of privacy [33].

Furthermore, users' trust in the data-protection practices of companies and governments can influence privacy behaviors and attitudes. Users' expectations for data-sharing practices by providers and other companies can particularly be influenced by their trust in the provider. Although not specifically focused on social networks, Ion et al. studied users' expectations for privacy in storing data in the cloud [29]. Through a series of 36 semi-structured interviews and survey responses from 402 individuals living in India and Switzerland, the authors found sharp differences in trust of cloud storage relative to storage on their own machines. Relative to Indian participants, Swiss participants reported a stronger belief that government access to private documents is a bad thing and stronger disagreement with the idea that governement surveillance of the Internet is good. Although they concentrated on user perceptions, the authors did note that Switzerland has strong legal requirements for data protection, whereas privacy law in India remains nascent.

One factor that surprisingly has not been studied extensively is how the portrayal of social media providers in the general media influences users' trust. From movies like *The Social Network* to newspaper articles extolling the virtues of a provider, or noting privacy issues, intuition dictates that users' trust in a provider and consequently their sharing behaviors would likely be influenced by the media. For instance, Ur and Wang found that some interview participants based their understanding of the inner workings of Facebook on the movie *The Social Network* [54].

5.3 Localized Networks

In recent years, Facebook has gained the lion's share of social media attention across the globe [39]. Surprisingly, the extent to which privacy behaviors on Facebook within a particular culture were shaped by earlier use of a localized site has not received much research attention. The sparse research in this area has found interesting anecdotes. For instance, Kisilevich and Mansmann automatically collected and analyzed 30 million user profiles from five Russian social networking sites [32]. While their conclusion that users of these Russian social networking sites generally disclose less personal information than Americans is interesting on its own, their comments on methodology are particularly insightful. They note that their successful crawl of most of these Russian sites was enabled by curious privacy practices by both the social networking provider and the user. On some of these sites, users cannot restrict all or part of their profile from public view, yet users are also required to upload photos or other content in order to see friends' messages or photos. They also note that certain sites lack even basic rate-limiting features that would have prevented large-scale downloading. Ur and Wang's interviews of Hungarian social networking users found widespread belief among users that iWiW, a localized social network, had shoddy security practices [54]. They also noted that iWiW for the most part lacked user-facing privacy controls. In more theoretical work, Imre focused on the unique interplay between localized networks and nationalism, focusing on a particular tension between the "national intimacy" of localized online social networking sites and the cultural barriers erected by decades of communist rule in Eastern Europe [28].

5.4 Language

Language can have a particular influence on privacy in social media. Ur et al. studied language issues in the communication of privacy information in online social networks [53]. They investigated the extent to which social networks' privacy-critical information was made available in the languages in which the site was offered. On both Facebook and Twitter, the authors noted substantial instances of privacy-critical information not having been translated. They also found a number of cases of partial translation, in which privacy-critical text switched between languages, potentially rendering it incomprehensible. Language issues also impact users' privacy and security in more subtle ways. For instance, Bonneau and Xu identified that many of the websites they studied handled passwords containing characters outside the Latin alphabet incorrectly, often severely compromising security [7].

One interesting privacy strategy identified in the literature involved users writing things in a language spoken by only a subset of their friends to achieve ad hoc access control. For instance, some Namibian Facebook users who participated in interviews with Peters et al. said they switched languages as a way of restricting friends, as opposed to unfriending them [45]. Of course, machine translation has always provided one vector, albeit an inconvenient one, for this access-control strategy to be defeated. Now that Facebook offers one-click translation in-line, however, using language to restrict access to a post seems even less viable. Because many individuals use Facebook as an archive of content over time, with many different temporal facets impacting sharing decisions [67], the retroactive privacy of older information, written in other languages that can now be translated in-line, raises additional issues.

6. DISCUSSION

In Table 1, we present our proposed framework. Mirroring our organization of the themes we observed in our literature review, we have divided the table into questions that ought to be asked surrounding three aspects of privacy. First, there are questions concerning *cultural norms* and other general aspects of a culture's traditions. Next, we suggest *legal issues* and other jurisdictional or structural considerations that are likely to impact how a society at large expects data to be protected and providers to be accountable. Finally, we identify *user expectations* borne from precedents set by the media, prior services, and generally anticipated behaviors. We argue that only when a social media service clearly supports the questions we articulate directly in Table 1, as well as related questions in the same domain, can one begin to feel confidence that privacy is supported across a diverse group of users.

Given this proposed framework, a natural first question would be how to apply it. We imagine that this framework could be most directly applied by providers of social networking sites in determining whether their service has potential gaps in its support for user privacy across sets of diverse users from around the globe. At the same time, it could help researchers, regulators, or consumer advocates reason systematically about the same issues when auditing or otherwise evaluating sites.

One could also imagine future research that attempts to develop privacy behaviors or interfaces that adapt automatically based on a user's perceived culture or national origin. For instance, Reinecke and Bernstein proposed creating culturally adaptive interfaces to improve user experience, although their work is not particular to privacy [47]. While they concentrated on vectors like the density of information and aesthetics, one can imagine making interfaces that similarly adapt to communicate privacy information and choose default settings in a culturally sensitive manner. Of course, despite the initial research we have surveyed in this paper, achieving a full understanding of how cultures differ in terms of privacy preferences remains an open problem, and the great danger of stereotyping a culture, rather than supporting it, must always be considered. While such a tool could be valuable, it is an easy step to imagine the pitfalls of such an approach. One might question whether it is indeed possible to identify accurately with what culture a user identifies, and to adapt interfaces to what are perceived to be average characteristics of that culture. By overgeneralizing, such adaptations might even do more harm than good, so we leave the evaluation of these sorts of ideas to future work.

6.1 Difficulty of Cross-Cultural Research

In developing this framework, we have observed that the literature on cross-cultural privacy studies in social media is relatively sparse. Many of the studies surveyed in this paper focused on one or two cultures, had limited sample sizes, and used ad hoc recruitment mechanisms. These flaws are not surprising when considering the difficulties of this sort of cross-cultural research.

Language issues cause major difficulties in conducting cross-cultural research. In particular, few surveys have been translated to potential participants' native languages, and the results of any cross-cultural survey offered only in English must be treated with suspicion. Researchers have dealt with language issues in a number of ways. For instance, Ion et al. interviewed participants from India and Switzerland primarily in English, although sometimes also in German or Hindi [29]. In contrast, Zhao et al. relied on professional translators to translate and back-translate between English and Chinese for a study of China and the United States [65]. In Krasnova and Veltri's survey of German and American Facebook users, participants from both countries were permitted to choose either an English-language or German-language version of the survey [34]. The authors removed responses, however, from Germans who took the English-language survey, and vice versa. When studies attempt to cover a wider area, language issues become increasingly prominent. Cardon et al. for example, translated their survey instrument into only some of the languages spoken in the eleven cultures they studied, biasing the sample by restricting responses in the remaining countries to participants who spoke English [11].

Recruiting participants is an additional challenge. First of all, acquiring approval from IRBs or similar research ethics boards becomes quite complicated when a study will take place in multiple locations, some of which fall outside the jurisdiction of a researcher's home ethics board (and sometimes outside the jurisdiction of any formal ethics board). Second, the recruitment process itself can be unfamiliar in new areas, and global participant pools unfortunately do not exist. Simply relying on undergraduates enrolled in researchers' courses is often insufficient, although forming partnerships across institutions for studies (e.g., [62]) can sometimes be viable. As a result of recruitment difficulties, some studies appear to have been conducted in a single culture not out of design, but out of necesssity. This ethnographic work can be quite valuable for identifying interesting characteristics of a particular culture, yet large-scale studies can explore ideas across many cultures.

6.2 Conclusion and Future Work

With the goal of helping researchers and providers of social networking sites better support privacy across many different cultures, we surveyed the literature on cross-cultural privacy issues in online social media. We highlighted areas of concern raised by each study, synthesizing these ideas into an extensible, three-part framework comprising cultural norms, legal issues, and user expectations.

Cultural Norms	Is there a clear conception of privacy? If so, what is it? What is considered sensitive or private content? What constitutes offensive content? Is it preferable, essential, or undesired that users from a particular culture be able to use pseudonyms? With whom does a user expect posts will be shared? What is the structure of his/her network? For what types of information does revelation cause a user distress? In what cases does information revelation cause users danger or harm? What are norms around posting and sharing photos of others, and of the user him/herself?
Legal Issues	Are people required by the law to provide their real identities to use the service? What are the restrictions or requirements for data collection, processing, storage, and sharing? What data-protection steps are legally required, and what is the legal definition of personal data? What level of access must users have to their data? In which jurisdictions is the social networking provider liable for its actions? Can government agencies request user information from the service providers? Under what conditions?
User Expectations	Is privacy-critical information communicated clearly in the user's language? Do users expect that they can limit their audience by communicating in a certain language or lexicon? What localized social networks have set precedents that drive users' privacy expectations? How are social media sites portrayed in the media and pop culture? What are expectations around surveillance by the social networking provider, the government, and third parties?

Table 1: Our proposed framework of minimum questions that a social media service must address in order to provide users from diverse backgrounds and cultures reasonable privacy protections.

Although we leave the application of this framework to future work, we imagine at least two different direct applications. First of all, either researchers or technology providers could use this framework in either a case study or a large-scale investigation to identify gaps in privacy affordances on particular social media sites. In a second direction, we plan to use this framework to suggest potential axes of interest and survey questions for a future empirical study of whether users' privacy concerns, expectations, and usage of social networking sites differ across cultures.

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