

“Privacy is not a concept, but a way of dealing with life” Localization of Transnational Technology Platforms and Liminal Privacy Practices in Cambodia

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Privacy scholarship has shown how norms of appropriate information flow and information regulatory processes vary according to environment [7, 42], which change as the environment changes, including through the introduction of new technologies [44]. This paper describes findings from a qualitative research study that examines practices and perceptions of privacy in Cambodia as the population rapidly moves into an online environment (specifically Facebook, the most popular Internet tool in Cambodia today). We empirically demonstrate how the concept of privacy differs across cultures and show how the Facebook platform, as it becomes popular worldwide, catalyzes change in norms of information regulation. We discuss how the localization of transnational technology platforms provides a key site in which to investigate changing cultural ideas about privacy, and to discover misalignments between different expectations for information flow. Finally, we explore ways that insufficient localization effort by transnational technology companies puts some of the most marginalized users at disproportionate information disclosure risk when using new Internet tools, and offer some pragmatic suggestions for how such companies could improve privacy tools for users who are far - geographically or culturally - from where the tools are designed.

CCS Concepts: • Human-centered computing → Empirical studies in HCI;

Additional Key Words and Phrases: HCI4D; ICTD; transnational computing; privacy; Cambodia

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1 INTRODUCTION

Recent CSCW literature shows an increasing interest in work that takes place at the intersection of privacy theories [6, 42, 44] and computing in non-Western contexts [4, 5, 47, 55]. Our paper contributes to this literature by showing how the localization of transnational technology platforms provides a new setting in which to study how culturally-specific understandings of privacy shift as diverse societies move online. We present findings from a qualitative research study examining practices and perceptions of privacy in Cambodia as communities rapidly move into an online environment, particularly Facebook, the most popular Internet tool in Cambodia today.

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Transnational technology companies based in the West too often take a "view from nowhere" [21] approach to designing for a "universal" user base. Our work highlights a need for these companies to tailor their tools so that they are understandable for users who may culturally depart from the norms of designers based in Silicon Valley. Although we recognize that innovation does happen at the so-called margins and in ways that are sometimes different and unexpected to Western centers of technoculture [25, 33], we also see the systematic ways that specific translations of privacy and expectations for information flow are embedded into popular transnational technologies [17], putting some of the most culturally marginal users at increased risk in new information environments.

Through 43 interviews with a diverse range of Cambodian participants, we reveal that the Western concept of privacy is not translated easily into the Cambodian (Khmer) language. In Khmer-language interviews, we translated and explained the concept through adjacent concepts with Khmer terms for personal or confidential information, the concept of secrecy, and the idea of the right to own your own information. Reducing these nuances, however, Facebook has translated the word 'privacy' in its settings using the Khmer term 'peap aikajun', literally translated as the noun form of private (as in, private property). This is a concept and word that few Khmer speakers use or understand. Conversations and education about using Facebook safely in Khmer language often entail substantial definitional and translational work. Because of these translation issues and other problems that we discuss, many Cambodians who only speak Khmer have trouble understanding Facebook in Khmer language. As a result, some choose not to use Khmer-language Facebook settings at all and instead use English-language settings, memorizing the most important functions for their daily use. These conditions put them at risk, however, for information vulnerabilities.

Along with the concept of privacy taking on linguistic specificity in Khmer language, so too do norms of information regulation take on a culturally-specific character. We build on seminal privacy theory by Nissenbaum [42] and Altman [6] to show that Cambodians across demographics hold specific culturally-informed expectations about what kinds of information about them flow to certain audiences in certain contexts. These expectations for information regulation are not necessarily bounded by national lines; instead we see diversity in the norms and practices of information regulation across geographies, gender, age, class, profession, and educational background within Cambodia. Despite this variety, many of our participants, particularly bilingual participants who have had experiences both in Cambodia and in other cultural settings (either in international schools in Phnom Penh or living abroad), point to generalizable expectations for information regulation in Cambodian communities. These participants often refer to certain topics or parts of life that are openly discussed in their Cambodian communities that might be more tightly held in other communities in which they have lived in the US, France, Germany, or Norway (or other cultural settings).

Transnational tools like Facebook are embedded with particular cultural understandings of privacy; as they move transnationally and cross-culturally, new users are adapting their norms and practices of information regulation (sometimes thought of as "privacy" and sometimes not) for the new possibilities and risks of these platforms. Facebook now offers a new setting in which different culturally-informed expectations about information flow meet, sometimes illuminating misaligned expectations for appropriate sharing held by different users of the site. We give an example of this kind of misalignment in the not-yet established norms for sharing news and images about traffic accidents on Cambodian Facebook. Many Cambodian users are rapidly changing their information regulation practices on Facebook to be more self-protecting. We give several examples of these new practices, including broad self-censorship of political speech. The rise of Facebook has also led to new anxieties about information flow, particularly when the way that Facebook works appears unclear to our participants, as we explore in greater detail in our findings and discussion.

In the paper that follows, we first discuss related work on online privacy theory, transnational computing, and journalistic and scholarly critiques of Facebook. We then describe our research context, qualitative methods, and findings. Our discussion offers pragmatic suggestions for how transnational technology companies like Facebook might improve the usability of tools for Cambodians and others who use minority languages and have culturally-specific information regulation practices.

2 RELATED WORK

The concept of privacy moves uneasily across borders and through languages. Even within the English language, privacy is notoriously vague and its meaning shifts across sub-cultures depending on specific situations [50]. Altman describes privacy as a dialectic and dynamic boundary regulatory process, conditioned by our own experiences and those of others with whom we interact (dialectic), and in a continual state of negotiation (dynamic) [6]. All cultures have some sort of privacy, meaning that they engage in the regulation of information. The ways that access to information are controlled, however, are unique to the circumstances of any given culture, and change as that culture changes [7]. Nissenbaum's [42] theory of contextual integrity postulates that we have a right to privacy, but it is neither a right to control our personal information nor a right to have access to this information restricted (understood absolutely and universally). Rather, we have a right to live in a world in which our expectations about the flow of personal information are, for the most part, met. These expectations, though, are a product of social norms, which are again unique to particular cultures, so can look different in different cultural contexts.

Since its origins, the Internet has been a catalyst for further changing the already-dynamic concept of privacy. Palen and Dourish [44] build on Altman's theory of privacy and apply it to computing contexts; they argue that since privacy management is a response to circumstances rather than a static enforcement of rules, it is defined by a set of tensions between competing needs. Technology can have many impacts on our notions of privacy, disrupting boundaries and spanning them, establishing new ones, and so on [44]. Changing the cultural concept of privacy does not happen immediately and it does not happen without negative consequences, often the unintended exposure of information an individual holds somehow sacred. For example, boyd [12] discusses the introduction of social media to American teenagers in the 2010s. Her participants use social media to communicate with one perceived audience (their peers) but they often disclose through posts personal information to a much wider audience than they expect, communicating to adults, including authority figures like teachers and parents. In this way, these teenagers experience what boyd calls a "context collapse."

As the Internet and digital tools move into new societies and ways of knowing as ubiquitous tools, culture changes based on both historical specificities emerging in that culture and transnational imaginations, which are sometimes built into tools themselves [24]. This process is reminiscent of historical ways that societies have integrated culturally-specific, technologically-mediated and transnational imaginations (see for example, [31, 34, 39]). Though design takes on multiple forms and technological action often lives outside of the domain of professional expertise in many global contexts [25], the movement of specific, popular digital tools and the values embedded into their design continue to hold power over user behavior and culture [17, 57]. Specific conceptual approaches to privacy, therefore, can be embedded into tools as they move cross-culturally.

Many non-Western societies are in the process of dynamically developing culturally-specific understandings and practices of online privacy as their populations move online. Some scholars have pointed to specific ethnic or regional sub-cultures and understandings of privacy (see for example, [10, 55, 61]). A number of studies have illuminated the ways that online privacy practices have evolved in South Asian contexts due to common sharing of devices [5], patriarchal customs

[52], conditions of extreme poverty [51], and inequality [47]. In the Arab Gulf, norms of information flow have emerged in part based on an emphasis on the collective rather than individual worldviews and computing habits, based on the strict adherence to Islamic norms for users [4]. Scholars have pointed out how different conceptual models for privacy have led to limited understandings of informed consent for research or clinical trials in non-Western countries, putting participants at risk [3, 16, 35].

Translation of the term privacy comes with particular difficulty in certain languages (including Khmer language). Mobile computing platforms often privilege the use of majority over minority languages for a variety of technological factors (autocorrect, etc), sociocultural dynamics (audience reach, etc) and linguistic characteristics (orthography, etc) [30]. Translating the text of platforms into minority languages presents challenges. Translations of scientific terms into native languages must take full account of the cultural, linguistic, and social dimensions of language. The work of appropriate and understandable translation sometimes requires iterative effort and multiple modalities. Two university teachers in Cambodia, for example, translated English scientific terms into Khmer and taught the concepts effectively through English-Khmer language pairs, repetition of terms, and pictures [45].

The consequences for unclear privacy terms and settings fall disproportionately on people who are already marginalized in normative Western technoculture or are in other ways vulnerable. Previous scholarship has shown how people marginalized in the United States due to poverty and low levels of education are more vulnerable to negative consequences from privacy breaches. For example, scholars have shown how the American poor face magnified privacy vulnerabilities [36]. Further, people with more limited technical understandings (which downwardly correlates with income and education) also perceive fewer privacy threats and feel less empowered to self-protect online [27]. Privacy vulnerabilities in the US are magnified for elderly adults [15, 32], disabled people [15], and children [26, 58, 59].

Following the Cambridge Analytica scandal (April 2018) [14], critiques of Facebook and the role it plays in many global lives are mounting. The European Union in response set the most comprehensive privacy regulations in the world with the General Data Protection Regulation, or GDPR, in May 2018 [49]. Critiques from journalists [41] and scholars [20, 54] warn against the unregulated power of Facebook on society. Most of this coverage, however, is set in the Global North, and the effects of Facebook on contexts across the Global South have still have not garnered as much empirical scholarly attention as they deserve. Although many of our participants do have a growing caution in using Facebook, its popularity is unparalleled by any other platform in Cambodia. Working from Ames [8], we account for this popularity and staying power (for now) of Facebook to its charismatic nature - its brand, network effects, and status.

We extend prior literature with an empirical examination of how the rising popularity of Facebook in Cambodia is changing information regulation practices for many Cambodians. We demonstrate that in this moment of rapid growth of Internet penetration, norms are not yet established, and marginalized actors are the ones most at risk for privacy breaches. These marginalized users include speakers of minor languages, who have historically been underrepresented and disadvantaged on the Internet, particularly older adults and users with lower income and educational status. We argue that though localization happens in part by Cambodians themselves, part of the work of localization falls to the transnational technology companies and must be done in a responsible way. We now move to a description of our methods and the Cambodian context.

3 RESEARCH CONTEXT

Our research took place in Cambodia, a World Bank designated lower middle income country of 16.1 million people in Southeast Asia. 90% of Cambodians identify as Khmer; ethnic minorities

include Vietnamese, Chinese, Cham (a Muslim ethnic group), and a number of indigenous ethnic groups who live predominantly in hill areas. In recent years Cambodians have begun to rapidly adopt digital tools. Facebook is by far the most popular online platform, with the number of Cambodian users growing from 3.4 million in 2016 to 6.8 million in 2018 [23], representing 42% of the population. Many Cambodians (including some of our participants) only access the Internet through Facebook (as is the case in many countries, as discussed by Miller [38]). For those in the Phnom Penh technology sector, Facebook is often described as synonymous for the Internet.

Khmer is a non-tonal language part of the Mon-Khmer language family and spoken by about 16 million people. It is written in Khmer script, an abugida historically emerging from Southern India (an image of the script is available in Fig. 1) [22]. 78% of Khmer people are literate in Khmer script [53]. The second most common language of Cambodia is English, spoken in international businesses and NGOs. The technology sector, based in Phnom Penh, is largely bilingual. Activists and startups within the tech sector work to make space within these communities for preserving and promoting the Khmer language (for example, see the Koompi computer by Smallworld, the Khmer keyboard, and the Wapatoa blog).

We began fieldwork in August 2018, approximately a month after the Cambodian general election (July 29, 2018), which human rights advocates have widely criticized for representing a rapid pivot to illiberal democracy after twenty-five years of democratization efforts [11] because, on November 16, 2017, the Cambodian Supreme Court dissolved the Cambodian National Rescue Party (the primary opposition party) [37]. On July 29 2018, the Cambodian general election took place with the ruling Cambodian People's Party declaring a clear victory. Changes in regulation of the media sector preceded these political events. At the end of August 2017, 32 independent (non-state) radio stations were forced to close or stop broadcasts of the Voice of America or Radio Free Asia [60]. In the next weeks, a prominent English-language newspaper in Phnom Penh closed after a tax dispute [1, 60].

Facebook and the Internet more broadly came under more state sector scrutiny after these events in the traditional media sector. Vong and Hok argue that Facebook (particularly what they call "everyday youth Facebooking") is critical to Cambodian politics, though their paper was written in an earlier political moment after the 2013 election [56]. Before the end of 2017, seven people were arrested for statements on Facebook [18]. In May 2018, the Ministry of Interior, the Ministry of Posts and Telecom, and the Ministry of Information jointly declared that they could monitor the Internet and make arrests based on online activity [9]. The week before the July election, access to independent news websites was cut off within Cambodia [46]. These events have heightened awareness around government surveillance and monitoring of online activities as well as increased sensitivity towards risks of online activity and unintended information flow.

4 METHODS

We conducted 43 semi-structured interviews that sought to understand participants' practices and perceptions of online privacy. We also reviewed primary documents from the public and civil service sectors as well as Cambodian journalism related to technology and media policy. This qualitative analysis was appropriate for our research questions as we were exploring the nuance and complexity of emerging information norms, questions that were not answerable by predetermined survey or quantitative measures. The first and second authors were based in Phnom Penh at the time of data collection and used snowball sampling to recruit participants in urban Cambodia. At rural research sites, we partnered with Cambodian community development programs to recruit participants. We traveled from Phnom Penh to these sites three times each over a four and a half month period and conducted interviews and participated in community events.

Category	No. of ppts	Category	No. of ppts
Men	31	Cham	5
Women	12	Buddhist	38
18-30 years old	22	Rural Northwest Cambodia	19
31-50 years old	10	Rural Southern Cambodia	10
Older than 50 years	11	Urban Cambodia	14

Table 1. Summary of participant characteristics

Our participant demographics are outlined in Table 1. We required that our participants use Facebook. We targeted interviews of local authorities (10), monks (4), and cell phone shop owners (4), all of whom have some level of expertise on our questions of online privacy. A subset of our participants (6) were experts in the (traditionally understood) technology sector in Phnom Penh, as IT professionals, owners of technology companies, or organizers of media literacy campaigns. We interviewed in five of twenty-five provinces. We sought out a diverse set of perspectives but our sample is not representative of Cambodia as a whole. Though we had a diversity of socioeconomic statuses, we also have a higher percentage of high income, urban, and bilingual participants than is representative for Cambodia. We have a larger number of male participants than female because local authorities, monks, and cell phone shop owners are usually men. We did not monetarily compensate our participants but would buy coffee or a snack if we met them in a public space for an interview, or would bring small gifts like candy, cookies, fruit, or household goods like soap if we interviewed in a private space to thank participants for their time.

The first and second author speak both Khmer and English and conducted interviews in both languages, often together. The interview protocol differed in Khmer and in English language, because of the translational challenges around the term privacy. Our bilingual participants were familiar with the term privacy in English as well as adjacent concepts in Khmer language; we therefore were able to ask them questions about privacy, and about their thoughts on conceptual and linguistic differences between the English term privacy and related terms and concepts in Khmer language. With participants who only speak Khmer, or Khmer and basic English, we used Khmer terms for your own information (pboadamean phteal khluon robos neak) or secret information (pboadamean som ngat) in interviews to understand their norms of information flow. During the interview, we explained in Khmer what we meant by the English term privacy, often using the phrase the right to own your information (sut leur pboadamean phteal khluon robos neak). We would skip inappropriate questions when participants were not familiar with relevant terms, or if they were not familiar with Facebook's settings.

Interviews started by asking participants about their demographic information (age, ethnic identity, and gender), and their educational and professional background. We then explored participants' expectations for information flow outside of online space (using examples of medical visits, personal finances, and work performance). We also asked questions to understand our participants' familiarity and comfort with technology, such as how regularly they used radio, TV, smartphones, Facebook and other mobile applications.

We then asked how participants use Facebook, what they like most about it, how they think about posting on Facebook, and who they think can see their postings. We asked if participants use Facebook for work and if they share mobile phones and/or Facebook accounts with their families. We asked if our participants use Facebook settings, including if they had ever set a post or photo to friends-only versus public and if they had an account password. In interviews with (traditionally

understood) technology experts (who we interviewed in English), we asked more generalized questions about standards of online privacy in the technology sector of Cambodia, and the ways that online privacy standards were developing in the public, private, and civil service sectors. We also customized our interview protocol for specific demographics including civil servants, monks, and cell phone shop owners to ask questions related to their areas of experience.

The research team included a mix of identity and positionality: three women, the first living in Cambodia as an American citizen, the second Cambodian, and the third living in America as a South African citizen, remotely advising. The first two authors often interviewed together as a pair. Having a Cambodian member of our team sometimes provided comforting cultural familiarity to our participants during interviews.

Throughout the data collection period, we kept a running memo of key findings emerging from interviews. When we started noting very few new findings, we felt we had reached a point of saturation. All interviews were audio-recorded and professionally transcribed and translated.

We performed thematic analysis [13] on all the translated and transcribed interview data and key primary source documents. The first author performed multiple passes over the data, discussing the evolving codebook with the rest of the team members after each iteration. The final codebook consisted of 35 codes, such as confusion with privacy settings, traffic accident, and fear of posting political views. These 35 codes were then clustered into higher-level themes that represent our prominent findings discussed in the next section. Examples of themes that emerged include information regulation norms, anxiety around online information, and disproportionate privacy risks. All authors discussed and agreed on the final set of themes and codes.

5 FINDINGS

We begin by describing our participants' general, offline ideas about information regulation in Cambodia and how these ideas change in online contexts, particularly on Facebook. Then we describe new anxieties that our participants shared and reveal information vulnerabilities that older adults are exposed to. We discuss the limited workarounds many older adults have developed to feel safer online, including getting help from their children. We finish our findings by complicating culturally-specific notions of privacy through a description of widespread transnational technological imaginations in Cambodia and the ways that new norms of information flow are emerging as Cambodians increasingly use the Internet.

5.1 Privacy in Cambodia

When asking bilingual participants about their expectations for privacy in Cambodia and differences between the English term privacy and Khmer indigenous ideas about privacy, we frequently heard the stereotype: "there is no privacy in Cambodia." One participant humorously told us,

I think there is a habit of expecting things to be public. Cambodia is very community-based. I grew up in a rural area where, seriously, what time you go to school, what time you come back, what you do throughout the day, when you go to sleep, is known by the whole community. We live outdoors. We don't spend a lot of time inside. In a traditional Cambodian house, everything is visible to everybody. - urban Cambodia, 34 y/o, male

Many participants told us that much personal information is generally understood to be public (known by family and community), including job performance, income, and health care status. As one participant said,

How old are you? – that's stuff you have to tell everybody. Everybody that knows you will be like, "Oh, what's your name? How old are you?" They have you say up front, all the time, how old you are. "What is your job? How much you earn?" You have to put it

out there. When it's asked, you cannot be offended by it because that's what normally people do. Yeah, but they don't mean it in a harsh way or mean way. It's how we grow up, how we're brought up that things need to be shared. For us, right now probably some people they think it isn't nice to ask people [these things], but for us it's normal. -urban Cambodia, 30 y/o, male

Some participants described real benefits about this way of life for community support and mental balance. For example, one participant said that if someone chooses to live alone, they may have a "private" lifestyle but their privacy is at odds with the community-style living common in Cambodia. She also described how private lifestyles can lead to isolation and make it more difficult for people to develop social support networks for coping when they have problems. "Privacy" can thus be at odds with mental well-being. She said,

Privacy to me means that if, say, you come to study in the city, and you want to live alone, you don't want to live with friends, you like to live with privacy. Yes, it is easy to do things like study or go anywhere. But I think maybe one day you could have a mental problem, because when you have a problem, you don't know how to talk with others, you just keep the problem inside and the problem will get bigger and bigger. I think then the privacy is not so good. -rural northwest Cambodia, 28 y/o, female

Another participant similarly told us that lack of privacy can be understood as a protective force.

Privacy somehow is very Western developed ... Here, in rural Cambodia, lack of privacy is for your protection. When things are very public you are much more protected in society. So very few things happen in private. -urban Cambodia, 42 y/o, male

When we asked more specifically about cases in which participants might want to protect their information, participants gave examples of kinds of information that they often like to keep to themselves or share only with their families or spouse. For example, we asked a 21-year-old female participant if there was any information that she likes to keep for herself. She replied, "any secrets about love." Several other young women participants told us that they tightly controlled information about their romantic relationships. Another bilingual participant boiled down the important connection between private information and personal dignity:

In general, the people of Cambodia, particularly the youth, they define privacy just as something that affects their dignity. So that is why I can say they do have privacy, but they do not have an understanding of the term privacy. -urban Cambodia, 35 y/o, male

5.2 Facebook and New Information Regulation Norms

After discussing our participants' general views on information regulation in their lives, we asked them how norms of information shift as they go online, centering our questioning on their use of Facebook. Across our sample, we found a general trust of the Facebook company; advertising and selling data did not emerge as a leading concern among interview participants. Scandals like Cambridge Analytica and GDPR were not covered widely in Cambodian news sources and only four participants had heard about these. The largest perceived risks were information leaks that broke social norms or put users at political risk when too much information was shared. These could happen through mistaken information disclosure or information theft. For example, a prominent Cambodian monk was recently outed for sexual activity based on exposed Facebook messages [29]. News of organized cybercrime and hacking rings are covered Khmer-language newspapers [2].

In our questioning, we asked our participants how they use Facebook tools to regulate information flow. In our sample, bilingual (English-Khmer) participants all used their Facebook in English



Fig. 1. Privacy settings from Facebook in Khmer and English

language. Many Khmer-only speakers also used English-language Facebook because the Khmer-language Facebook is seen as overly academic and difficult to understand for both Khmer-only and bilingual participants. None of the Khmer language-only speakers we interviewed, however, felt comfortable using the settings menus on Facebook in English or Khmer. They also did not understand the term *peap aikajun*, which Facebook uses for the word privacy in the Khmer-language Facebook settings (see Figure 1). Some bilingual participants understood how the company decided to use this term but all agreed that it was a very uncommon word in everyday speech, particularly in informal Khmer. As described in the introduction, instead of meaning privacy in the English sense, *peap aikajun* is the noun form of private. *Aikajun* means private (as in, private vs public institution) and the prefix *peap* is the generic prefix to make a word a noun.

Many of our participants developed online information protection strategies including using fake names, strategic non-use, and self-censorship. For example, a 21-year-old woman from rural Cambodia started using Facebook four years ago when she was 17. Her brother created a Facebook account for her with a fake name on it but her real photo. Subsequently, she had started a second Facebook account with her real name on it, but she still used the first account (with a fake name) with her old friends and new classmates (her peers). She told us that she used this fake information to protect herself, because she was so young when she started using Facebook and was scared about putting real information on her Facebook profile.

Some users who speak and write basic English understood how to control audience settings on specific Facebook posts (such as friends-only or public) using Facebook in English language settings. When we asked one participant how well she understood the settings on Facebook, she told us,

I know how to set it – to public and to friends-only. I understand when I see an alert. I set my tools in a detailed way but I don't know what this concept is [English word privacy].
-rural northwest Cambodia, 28 y/o, female

Everyone, however, when asked, expressed a desire for understanding more and protecting against perceived risks of their personal information being used in ways they didn't expect, which included fears of government surveillance, information theft, identity theft, and hacking. Many participants also wanted more training on online privacy and security skills.

5.3 New and Increased Anxiety Around Online Information

With the increased popularity of Facebook, our participants now think about protecting information in new ways. Our participants discussed an increased awareness and anxiety around how their information would be seen, perceived, and used by various audiences because of their use of

Facebook. Much of this worry has emerged from uncertainty about how Facebook works, and an ambiguous set of threats. A participant said,

Yes I am worried! I don't know how to use high technology and I don't feel safe using it. I heard from my friend that we shouldn't show our information to the public. Someone could steal your information to do bad things. -rural southern Cambodia, 64 y/o, male

Other anxiety comes from the exposure of more and more personal information to a more dispersed audience without the possibility of feedback.

I don't know, maybe I just have like social anxiety sometimes, too, with my presence on Facebook. I think, "Oh, people will think this about me, copy, share it to their friends also about me," that kind of culture. -urban Cambodia, 22 y/o, female

As this quote suggests, participants told us that it is hard to know how information that one puts on Facebook will be used and perceived by others, including friends, and what the consequences of those uses will be on one's reputation. This causes new anxieties.

Other participants told us that they are very careful about what they post about politics because of a heightened political sensitivity around the election cycle. For some, the political circumstances in Cambodia have made it so that they do not use Facebook for political news and sharing at all because of fear of negative consequences. This fear is fueled by rumors, shared through informal word of mouth channels. One participant told us,

I don't share. I dare not. I am scared. Friends send [political news] to me and I just look only. There could be a problem. I learned about from a relative that there could be a problem if you share political news. I just read and know and keep quiet. -rural northwest Cambodia, 36 y/o female

Another participant told us that he has felt a major transition between the 2013 election period, a hotly contested election between the ruling Cambodia's People Party and the opposition Cambodia National Rescue Party, when he felt like he could call for change on Facebook. In the 2018 cycle, he felt much more constrained in his use of the tool. He says,

Before we shared, now I rarely post. Before I didn't know, now I know better. Before I always shared, now I never share. If we put up sensitive information or "hot news," this can be a problem, or a challenge on Facebook. You cannot post, you cannot like what you want. We are scared. You cannot do what you want. - urban Cambodia, 21 y/o male

According to one participant, Facebook also has the potential to stop or correct offline actions because there is a new awareness of how social media can result in offline social consequences:

I think there's a new awareness of consequences of information going public because of Facebook. There is a new danger, not just in terms of scams and stuff like that, but that other people could accuse you, and there's no way or there's no law to defend against that accusation. -urban Cambodia, 35 y/o, male

Facebook also adds a new form of accountability for offline action, because people's bad behavior on Facebook can now have huge reputation consequences. This participant continued,

With Facebook, it's actually quite dangerous from a reputation standpoint. [If there is a traffic incident,] you see people interact much nicer because they're afraid that their license plate will be all over the news. You see that people don't scream, or at least people run away when there's a traffic accident and you see a recording. Things like that. Invasion of their privacy comes in those forms, but I wouldn't be surprised if it changes behavior. -urban Cambodia, 35 y/o, male

5.4 Vulnerable Groups and Community Facebook Use

More marginalized people in Cambodia demonstrated more vulnerabilities for information leaks. Higher education, English-speaking ability, literacy, and cosmopolitanism were all factors that led our participants to being more comfortable setting Facebook privacy settings and being aware of specific information leak risks. Since it is more common for more educated and cosmopolitan people to live in the capital of Phnom Penh, a higher proportion of users in the provinces were more vulnerable (though many users in Phnom Penh with lower education and income levels were equally vulnerable, and we saw examples of highly educated users living in provinces).

We also found a particular set of vulnerabilities for older adults (aged 50+). In our sample, none of our older participants felt comfortable setting passwords on their Facebook accounts or setting pin-codes on their phones. None of them felt comfortable setting Facebook privacy settings or setting a post as public versus friends-only. All of these older adults lived through the war period in Cambodia, explained that their education was interrupted by the war, and that they broadly do not feel comfortable using digital tools.

These older adults, however, also explained that they do have help using digital tools from their adult children or (more occasionally) cell phone shop owners (expanding earlier work on intermediated access in ICTD [48]). Sometimes, though, they still had trouble using the tools in the ways that they want. One woman we interviewed set up her Facebook with the help of her sister, who could post pictures for her. After she moved to another town, her neighbor helped her set up a new account (after she got a new SIM card and lost access to her old account), but the neighbor didn't post on her behalf like her sister would.

Urban participants told us that they often visited their families in hometowns in the provinces of Cambodia, sometimes teaching family and friends how to use digital tools (especially Facebook). With them, they brought ideas about online privacy from the city. One participant told us about how she and her siblings tried to get her father to use more caution in sharing on Facebook:

We just like tell him like, "Oh, your profile is public, everyone can see, or yes, I can see that, you shouldn't have done that, or put it to only family or your friends only." -urban Cambodia, 22 y/o, female

Adult children often struggle with being able to help their parents protect against online vulnerabilities. A number of adult children told us that they had set up passwords for their parents' accounts but that their parents had subsequently forgotten their passwords (which can be difficult to remember if in Roman script).

Information technology professionals routinely have stands in markets in Phnom Penh and in some other large Cambodian provincial towns to help users with their Facebook apps or other software problems that they might have on a smartphone. They frequently help customers make a new Facebook account when they have lost or forgotten their password and are locked out of their account. The cost to create a new Facebook account that users can't access for some reason (sometimes because they forgot their password) usually costs about 1000 riel (\$0.25 USD). This new professional practice is aligned with traditional hardware and software repair, which other recent studies have pointed to as a site for the reformulation of privacy norms [5].

We interviewed three cell phone shop owners (and spoke informally to many others), who reported that many of their customers ask them to set up a Facebook profile for them because they don't feel comfortable doing so themselves. None of the cell phone shop owners we spoke to set privacy settings for their customers' Facebook accounts. They also did not understand the English term privacy or set their own Facebook audience settings to "friends-only." One shop owner said someone recently tried to hack his Facebook account (he was sent an alert about an unrecognized attempted login and he changed his password; he did not notice any malicious behavior from the

attempted hack). He has subsequently consistently changed his password monthly. He has not, however, told his customers about the risks of hacking or set up passwords for them.

5.5 Transnational Technological Imaginations

Many in Cambodia have been exposed to different information norms while living in foreign countries, or through relationship with international people and cultures within Cambodia. We interviewed five participants from rural northwest Cambodia who had lived outside of Cambodia for periods, working in Thailand or Malaysia as wage laborers. One interview participant said that when he is working in Malaysia (working at a spare car parts business) he will use Facebook to read international news, including news from Cambodia. One of our participants used to be a house cleaner in Thailand and three of her six children are still currently working in Thailand. They use Facebook to stay in contact. Sometimes our participants buy devices across the border when they are cheaper there, and they reference different censorship patterns between nations (in Malaysia, for example, one Cham participant laments censorship based on religious grounds).

We interviewed six other participants who had studied abroad in England, the US, or France. Two had also gone to international schools in Phnom Penh. These participants referenced the English-language concept of online privacy; four were familiar with Cambridge Analytica and GDPR. When we asked one participant about her understanding of privacy she said,

Well, I think of privacy in English, you know, it's just something that I learned by going to English schools, and educated in the Western curriculum, not necessarily something I've learned going to public school, when I was younger. -urban Cambodia, 22 y/o, female

It can be hard for some of our participants to bring together different cultural understandings around privacy that they negotiate. The Cambodian technology sector also faces some common discriminatory prejudices. One participant - an IT professional - explained this problem:

I got a scholarship based on my GPA ...so I was sent to France for school to study protocols and data security. It was a life-changing experience. I kinda knew that there was no way I was gonna get a job as a data security or protocol developer in Cambodia. This is a developing country! We are driven for the programs that others brought over from another country. Still, I applied to be a network security manager in a bank and what they asked me was, "Do I know how to use Cisco UI?" ...so that was a bit depressing ...so I switched to work for [a large international development organization]. Somehow those big companies ...they want hire a team or a system from outside, so they can have guarantees and insurance for the security and everything. -urban Cambodia, 34 y/o, male

Another participant talked about the challenge for her localizing technical concepts like privacy while forging a career in the Phnom Penh technology design and development community, which has a large bilingual segment:

I think often in Cambodia, we get by using the English word only, but in cases where you look at: How do we talk about this concept in the rural community? How do we talk about it in a way that it makes sense? I think there's a lot of localization that needs to happen to make that work, right? The concept of private, no, there's a lot of misunderstanding, but the concept of belonging to me then we understand, or confidential is what's understood. -urban Cambodia, 30 y/o, female

Media literacy trainings are another way that privacy concepts have started to travel. In the past 12 months, there has been an increased number of media literacy trainings run by civil service organizations, including foreign and Cambodian-funded media literacy clubs. One participant was involved in this work and explained their approach to teaching privacy in an interview:

We try to have our students understand privacy, but not as a concept, but as a way of dealing with life, but we don't use a word. If the concept doesn't exist, doesn't matter what you call it. Nobody understands. You have to define the concept, instead of trying to find a word. So you have to create the concept. -urban Cambodia, 42 y/o, male

We emphasize that although information regulation norms are culturally specific, they have been dynamically and dialectically developed in Cambodia based on exposure to transnational ideas. These ideas come from migrant work in countries like Thailand and Malaysia, study abroad in England or France, exposure to international tourism, reading international news, or going to international schools. They might also come from attending a media literacy training, run by a domestic or international NGO. Though urban cosmopolitanism comes with particular privilege and class-based inflection (as Nguyen similarly points out in Vietnam [40]), transnational technological imaginations in Cambodia also reside across income brackets and in rural communities.

5.6 Liminal Norms of Information Regulation

Finally, our analysis reveals that the Cambodian culture is in a particularly dynamic moment in which norms about information are shifting onto an online environment and we see examples where social norms for regulating information are not yet established. One of the most poignant examples of this is the highly popular practice of posting about car accidents on Facebook, including images of bodies of the deceased. A number of participants told us that news of car accidents on Facebook was one of the biggest benefits of being on Facebook. Others really did not like seeing sometimes violent footage, or felt like it was harmful for their mental health. One participant said,

I'm afraid to see all kinds of accidents and I don't want to see it. It makes me feel not well when I watch it. -rural northwest Cambodia, 34 y/o, female

Some found, however, that it could be useful to have more information about accidents, particularly those close to home. As another participant explained,

Sometimes I want to see it and sometimes I don't want to see it. If the accident is in [my home village], I want to see it because I can get information to tell others. Like a few weeks ago, my neighbor who lives close to my house was in an accident. -rural northwest Cambodia, 36 y/o, female

A participant who grew up in Phnom Penh and spent time at school in England described how observing this practice of posting car accidents online represented a clash of cultures for her.

When, on Facebook, you see people share, you know, dead bodies at accidents. Maybe from my educational background, under the Western education system, I would probably think, "Oh, that's wrong," you know, like a violation of privacy, it's probably not very sensitive. But in Cambodia, we don't really see it like that. They're just like sharing, and they don't really see that it's disrespectful. -urban Cambodia, 22 y/o, female

Cambodian Facebook is a relatively new space in which social norms about information flow are not yet established. For the first time, Cambodians can publicly publish information about traffic accidents. Information about traffic accidents has value for communities, from knowing how to react to a death to taking action to avoid traffic delays. Others feel unsettled by violent images. Still others are influenced by social norms in other places where publishing images of dead people without consent from their families might be seen as a violation of privacy or disrespectful.

These differences in privacy expectations became apparent when a van carrying Save the Children staff members from a research trip in southern Cambodia back to Phnom Penh got into a tragic accident in June 2018, resulting in the deaths of four staff (two of whom were international staff) [28]. Within minutes, images of the accident were published publicly on Facebook. Some families

both in Cambodia and in other countries learned of the deaths through these images on Facebook, deeply upsetting some family members.

6 DISCUSSION

At a high level, our analysis shows that the localization of transnational technology platforms (like Facebook) provides a key site at which to investigate how norms of online information regulation develop in diverse settings. It is clear that Facebook – as an example of a Silicon Valley-based transnational technology platform – is a new context in which Cambodians interact, and new information regulation norms are developing there. We now discuss two important dimensions of the localization of Facebook in Cambodia: first, that transnational ideas impact how Cambodians across demographics think about information regulation; second, that lackluster localization (on the part of companies) affects Cambodians unevenly, with the greatest risks for negative consequences falling on those who are already most vulnerable. Finally, we offer some pragmatic suggestions to the Facebook company to alleviate immediate concerns.

6.1 Cultural Mixing and Unstable Information Regulation Norms

Many of our participants (particularly our bilingual participants) shared their ideas about the specificities of Cambodian information regulation norms, defined within national and linguistic bounds and also in more granular, sub-national ways. Our findings, however, also point to the difficulty in precisely delineating "Cambodian" and "Western" norms of information regulation (or the privacy practices within any other cultural category). Within the "West," we see culturally-specific norms of privacy emerge in different countries and sub-communities. One of our participants commented that she thought Germany was more sensitive to some privacy issues than the US, and the development of GDPR in Europe, but not the US, supports her observation. Another reason for the difficulty in making generalizable claims about culturally-specific ideas about privacy is that cultural mixing and transnational technological imaginations are commonplace in Cambodia, across socioeconomic status, geography, and age. Many Cambodian users, from cosmopolitan Phnom Penh to rural villages, have developed norms of information regulation through exposure to transnational ideas from the country's history of colonialism and the Cold War to contemporary multinational companies, international NGOs, recreational travel, study abroad, migrant work, international news, or travel from Phnom Penh to villages. Though cosmopolitanism at large (and access to technology) is associated with wealth, status, and privilege (see also [40]), we found that Cambodian users across demographics do not bemoan a sense of local isolation.

The rapid uptake of Facebook in Cambodia, though, has led to a dynamic moment and new context in which information regulation norms are particularly unstable (reminiscent of the "context collapses" of first generation Internet users in the US as demonstrated in boyd's work [12]). Some of these unstable norms have to do with the new interaction of "Cambodian" norms with foreign norms. For example, Facebook has made it possible to quickly publish photos of traffic accidents on Facebook to a Cambodian audience as well as a foreign audience, and there is not yet a consensus on whether these kinds of posts are appropriate or not. Our participants explain three desires that are sometimes at odds: the first is a desire for information for protection and community support; the second is a desire to protect oneself and one's community from vicarious trauma; the third is a desire to respect the (unknown) wishes of the victims of the traffic accident.

Many Cambodians have also identified new possible risks of the unintentional sharing of personal information on Facebook. Our participants developed a range of online information regulation practices, including strategic non-use, fake names, and self-censorship to combat these perceived risks. Other participants engaged in practices such as grown children helping their parents to manage their Facebook accounts. These were particularly important for users who were concerned

about exposing their political ideas broadly in a sensitive political moment. These practices highlight participants' rapidly adapting resourcefulness and their responsible community-oriented ways of protecting more vulnerable users.

6.2 Increased Information Vulnerability for More Marginalized Users

We also want to report on the limits that many users, particularly those who are in other ways marginalized, felt in using Facebook safely and comfortably. Technology giants like Facebook give so-called technological "peripheries," where minor languages are predominantly used, less attention. Facebook does change the way that Cambodians think about regulating personal information flow; at the same time, it has built its privacy settings in a way that is impossible for many Khmer speaking users to understand. We have identified that some demographics, including some of the most vulnerable – people with relatively less education, older adults, (disproportionately) rural users – have particular risks when using Facebook. Facebook is catalyzing new anxieties around information flow because many people do not understand exactly how the tool works, what the settings are, and how to protect themselves. Others are anxious because, even if they do understand to some extent how the tool works, it creates new social contexts where personal information is dispersed to a wide audience without feedback (creating social anxiety). Users worry these new information disclosures could lead to negative social repercussions.

Although many of our participants use various strategies to protect themselves on Facebook, they still report that they feel unsafe and uncertain using the tool. This leads us to ask: why do they continue to use it if it makes them feel unsafe? Part of the tool's appeal is its charisma [8]: its name-brand power and the little blue icon are recognizable as a source of legitimacy. Many of our participants perceive that, to be part of the digital revolution, they need to use Facebook, and the risks are perhaps not yet high enough that they are willing to stop using it. An exception, however, is for political discourse; our participants discussed how they have largely stopped using Facebook for political discussions because it is too risky.

Ames [8] asks why "charismatic" technologies seem to have "uncanny holding power" and "establish and reinforce the ideological underpinnings of the status quo through utopian promises." She suggests that a charismatic technology "derives its power ... through the possibility or promise of action" [8]. Gillespie has shown how technology companies promise to "empower" individuals to communicate, implying that they are "lifting us all up, evenly" through user-generated content [19]. For users in technological "peripheries," this promise of action and evenness is an appeal, even when (as we have shown), the company has done little to treat its far-flung users with equal respect and attention.

6.3 Design for Global Safety

Although not all of the information vulnerabilities we have shown can be fixed through technical design, our work does illuminate some design implications that might improve our participants' online safety when using Facebook. We believe that when a company has a global user base, they have a responsibility to make that tool usable and safe for all of their users, which is not currently the case for Facebook users in Cambodia. We have identified three specific changes that Facebook could make to its global design policies.

First, Facebook could work to translate the term "privacy" (and, ideally, the rest of its settings) in a way that makes sense to Cambodians and other users who speak a less common language or depart culturally from the norms built into the Facebook tool. To achieve this, they could hire local staff to rework the Facebook interface into minority languages, thereby making it understandable and usable in users' common language. Second, because the concept of privacy is different in many cultures, Facebook could provide instructions in local languages that are useful and understandable

to users across demographics. Building on Quigley et al. [45], these could include developing use cases and examples that are very concrete and that use images and text to clearly explain various privacy functions (e.g., passwords, how to set posts as friends-only or public, or how to set notification alerts for phones). Third and more broadly, Facebook could hire Khmer-speaking Cambodia-based researchers to better understand the nuanced impacts of Facebook on society, and ways to protect its users in this dynamic moment.

Right now, much of the work that should be regulatory (government) or corporate (Facebook) responsibility is being ofloaded onto an already overburdened civil service sector in Cambodia (e.g., NGOs) who provide media literacy trainings and work to develop media literacy curricula, including privacy trainings. If Facebook is not able to make its privacy settings clear to average Cambodian users, they could alternatively help to fund these efforts from the civil service sector.

Although our findings and design suggestions focus specifically on Facebook, since it is the most used platform in Cambodia today, we expect that other transnational technology companies that market themselves in communities with specific language and cultural requirements would face similar challenges and might benefit from similar efforts to localize their platforms appropriately.

7 CONCLUSION

This paper showed how localization of Facebook, and transnational technology platforms more broadly, are key sites for investigating the interactions between different concepts, practices and norms of privacy. We discussed how norms of information regulation take on specific forms in Cambodia and these norms are changing with the rapidly increasing use of Facebook. We showed that online information regulation norms are in a dynamic moment of being worked out, based on a complex interaction of transnational and indigenous norms and values. Finally, we offered suggestions for how Facebook might build a safer tool for its global user base.

The issues we focus on here address only one layer of concerns at the nexus of culturally-specific norms of information regulation and global computing safety. Another important issue that we do not address here is that most of our participants do not understand and therefore have no way to give true informed consent for the ways that their data is being used by Facebook. As Nissenbaum [43] has written, even informed consent might not justify the ways that companies like Facebook use people's data because of external pressures to be on social media. Ultimately, many of the problems we raise in this paper will need to be worked out through broad internationally-developed regulation of technology platforms. Suggesting that companies self-regulate is not adequate; Facebook might have business incentives to encourage information disclosure through public settings because more public information leads to greater engagement on the site. International regulation is required to determine what kinds of data collection practices should be permissible, and minimum requirements for usability of safety and privacy tools. Regulating these platforms on an international scale, however, represents a substantial challenge of global consensus building and enforcement, in part because of the translational and definitional challenges we have discussed.

This paper also suggests other fruitful areas of research in settings where different understandings and expectations of privacy meet, leading to translational difficulties, misalignment and unintended information disclosure. These include the development of database management, social media policies and privacy training guidelines in organizations that work cross-culturally and across geographies, such as international NGOs and multinational companies.

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REFERENCES

- [1] 2017. Cambodia Daily shuts with 'dictatorship' parting shot at prime minister Hun Sen. *The Guardian* (2017). <https://www.theguardian.com/world/2017/sep/04/cambodia-daily-shuts-with-dictatorship-parting-shot-at-prime-minister-hun-sen>
- [2] 2019. Police crackdowns on 163 Chinese nationals related to cybercriminals in Siem Reap. *Fresh News* (2019). http://m.freshnewsasia.com/index.php/en/localnews/117430-2019-03-28-05-07-14.html?fbclid=IwAR1VTy_ThR9Cu8lpyajxg4fFAv__cxqjldebFz18HEqCN39VNplj3bQbpvQ
- [3] Quarraisha Abdool Karim, Salim SABdool Karim, Hoosen M Coovadia, and Mervyn Susser. 1998. Informed consent for HIV testing in a South African hospital: is it truly informed and truly voluntary? *American journal of public health* 88, 4 (1998), 637–640.
- [4] Norah Abokhodair, Adam Hodges, and Sarah Vieweg. 2017. Photo sharing in the Arab Gulf: Expressing the collective and autonomous selves. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. ACM, 696–711.
- [5] Syed Ishtiaque Ahmed, Md Romael Haque, Jay Chen, and Nicola Dell. 2017. Digital Privacy Challenges with Shared Mobile Phone Use in Bangladesh. *Proceedings of the ACM on Human-Computer Interaction* 1, CSCW (2017), 17.
- [6] Irwin Altman. 1975. *The Environment and Social Behavior: Privacy, Personal Space, Territory, and Crowding*. (1975).
- [7] Irwin Altman. 1977. Privacy regulation: Culturally universal or culturally specific? *Journal of social issues* 33, 3 (1977), 66–84.
- [8] Morgan G Ames. 2015. Charismatic technology. In *Proceedings of The Fifth Decennial Aarhus Conference on Critical Alternatives*. Aarhus University Press, 109–120.
- [9] Radio Free Asia. 2018. Cambodia to Monitor, Control Online News Ahead of Upcoming Ballot. (2018). <https://www.rfa.org/english/news/cambodia/news-06042018162755.html>
- [10] Subhajit Basu. 2012. Privacy protection: a tale of two cultures. *Masaryk UJL & Tech*. 6 (2012), 1.
- [11] Hannah Beech. 2018. Cambodia Re-Elects Its Leader, a Result Predetermined by One. *New York Times* (2018). <https://www.nytimes.com/2018/07/29/world/asia/cambodia-election-hun-sen.html>
- [12] Danah Boyd. 2014. *It's complicated: The social lives of networked teens*. Yale University Press.
- [13] Virginia Braun, Victoria Clarke, Nikki Hayfield, and Gareth Terry. 2019. Thematic analysis. *Handbook of Research Methods in Health Social Sciences* (2019), 843–860.
- [14] Nicholas Confessore. 2018. Cambridge Analytica and Facebook: The Scandal and the Fallout So Far. *The New York Times* (2018). <https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html>
- [15] Raymundo Cornejo, Robin Brewer, Caroline Edasis, and Anne Marie Piper. 2016. Vulnerability, sharing, and privacy: Analyzing art therapy for older adults with dementia. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*. ACM, 1572–1583.
- [16] Katie Featherstone and Jenny L Donovan. 2002. ãÄlJWhy donãÄŽt they just tell me straight, why allocate it?ãÄš The struggle to make sense of participating in a randomised controlled trial. *Social science & medicine* 55, 5 (2002), 709–719.
- [17] Mary Flanagan, Daniel C Howe, and Helen Nissenbaum. 2008. Embodying values in technology: Theory and practice. *Information technology and moral philosophy* 322 (2008).
- [18] Cambodian Center for Independent Media. 2017. Challenges for Independent Media. (2017). <https://www.ccimcambodia.org/wp-content/uploads/2018/02/Challenges-for-Independent-Media-2017-English.pdf>
- [19] Tarleton Gillespie. 2010. The politics of platforms. *New media & society* 12, 3 (2010), 347–364.
- [20] Tarleton Gillespie. 2018. *Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press.
- [21] Donna Haraway. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist studies* 14, 3 (1988), 575–599.
- [22] Franklin E Huffman. 1970. *Cambodian system of writing and beginning reader with drills and glossary*. Vol. 13. Adam Wood.
- [23] Geeks in Cambodia. 2018. Cambodia's 2018 Social Media and Digital Statistics. (2018). <http://geeksincambodia.com/cambodias-2018-social-media-digital-statistics/>
- [24] Lilly Irani, Janet Vertesi, Paul Dourish, Kavita Philip, and Rebecca E Grinter. 2010. Postcolonial computing: a lens on design and development. In *Proceedings of the SIGCHI conference on human factors in computing systems*. ACM, 1311–1320.
- [25] Margaret Jack, Jay Chen, and Steven J Jackson. 2017. Infrastructure as creative action: Online buying, selling, and delivery in Phnom Penh. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. ACM, 6511–6522.
- [26] Haiyan Jia, Pamela J Wisniewski, Heng Xu, Mary Beth Rosson, and John M Carroll. 2015. Risk-taking as a learning process for shaping teen's online information privacy behaviors. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*. ACM, 583–599.

- [27] Ruogu Kang, Laura Dabbish, Nathaniel Fruchter, and Sara Kiesler. 2015. My Data Just Goes Everywhere: User Mental Models of the Internet and Implications for Privacy and Security. In Eleventh Symposium On Usable Privacy and Security ({SOUPS} 2015). 39–52.
- [28] Meta Kong. 2018. Crash kills four staffers of NGO. Phnom Penh Post (2018). <https://www.phnompenhpost.com/national/crash-kills-four-staffers-ngo>
- [29] Buth Reaksmey Kongkea. 2017. Monk accused in sex scandal. The Khmer Times (2017). <https://www.khmertimeskh.com/88786/monk-accused-sex-scandal/>
- [30] Derek Lackaff and William J Moner. 2016. Local languages, global networks: Mobile design for minority language users. In Proceedings of the 34th ACM International Conference on the Design of Communication. ACM, 14.
- [31] Brian Larkin. 2008. Signal and noise: media, infrastructure, and urban culture in Nigeria. Duke University Press.
- [32] Karen Levy, Lauren Kilgour, and Clara Berridge. 2018. Regulating privacy in public/private space: The Case of Nursing Home Monitoring Laws. (2018).
- [33] Silvia Lindtner. 2015. Hacking with Chinese characteristics: The promises of the maker movement against China's manufacturing culture. *Science, Technology, & Human Values* 40, 5 (2015), 854–879.
- [34] Silvia Lindtner, Ken Anderson, and Paul Dourish. 2012. Cultural appropriation: information technologies as sites of transnational imagination. In Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work. ACM, 77–86.
- [35] Alex John London. 2000. The ambiguity and the exigency: clarifying 'standard of care' arguments in international research. *The Journal of medicine and philosophy* 25, 4 (2000), 379–397.
- [36] Mary Madden, Michele Gilman, Karen Levy, and Alice Marwick. 2017. Privacy, poverty, and Big Data: A matrix of vulnerabilities for poor Americans. *Wash. UL Rev.* 95 (2017), 53.
- [37] Dara Mech and Ananth Baliga. 2017. Death of democracy: CNRP dissolved by Supreme Court ruling. The Phnom Penh Post (2017). <https://www.phnompenhpost.com/national-post-depth-politics/death-democracy-cnrp-dissolved-supreme-court-ruling>
- [38] Daniel Miller. 2011. Tales from facebook. Polity.
- [39] Rudolf Mrázek. 2018. Engineers of happy land: Technology and nationalism in a colony. Princeton University Press.
- [40] Lilly U Nguyen. 2018. "This is not who we are": Freedom as Moral Affect and the Whiteness of Mutuality. *Catalyst: Feminism, Theory, Technoscience* 4, 1 (2018).
- [41] Michael LaForgia Nicholas Confessore and Gabriel J.X. Dance. 2018. Facebook's Data Sharing and Privacy Rules: 5 Takeaways From Our Investigation. The New York Times (2018). <https://www.nytimes.com/2018/12/18/us/politics/facebook-data-sharing-deals.html>
- [42] Helen Nissenbaum. 2009. Privacy in context: Technology, policy, and the integrity of social life. Stanford University Press.
- [43] Helen Nissenbaum. 2011. A contextual approach to privacy online. *Daedalus* 140, 4 (2011), 32–48.
- [44] Leysia Palen and Paul Dourish. 2003. Unpacking privacy for a networked world. In Proceedings of the SIGCHI conference on Human factors in computing systems. ACM, 129–136.
- [45] Cassie Quigley, Alandeom W Oliviera, Alastair Curry, and Gayle Buck. 2011. Issues and techniques in translating scientific terms from English to Khmer for a university-level text in Cambodia. *Language, Culture and Curriculum* 24, 2 (2011), 159–177.
- [46] Reuters. 2018. Cambodia blocks some independent news media sites: rights group. (2018). <https://www.reuters.com/article/us-cambodia-election-censorship/cambodia-blocks-some-independent-news-media-sites-rights-group-idUSKBN1KH29Q>
- [47] Nithya Sambasivan, Garen Checkley, Amna Batool, Nova Ahmed, David Nemer, Laura Sanely Gaytán-Lugo, Tara Matthews, Sunny Consolvo, and Elizabeth Churchill. 2018. "Privacy is not for me, it's for those rich women": Performative Privacy Practices on Mobile Phones by Women in South Asia. In Fourteenth Symposium on Usable Privacy and Security ({SOUPS} 2018). 127–142.
- [48] Nithya Sambasivan, Ed Cutrell, Kentaro Toyama, and Bonnie Nardi. 2010. Intermediated technology use in developing communities. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ACM, 2583–2592.
- [49] Adam Satariano. 2018. G.D.P.R., a New Privacy Law, Makes Europe World's Leading Tech Watchdog. The New York Times (2018). <https://www.nytimes.com/2018/05/24/technology/europe-gdpr-privacy.html>
- [50] Daniel JSolove. 2005. A taxonomy of privacy. *U. Pa. L. Rev.* 154 (2005), 477.
- [51] Janaki Srinivasan, Savita Bailur, Emrys Schoemaker, and Sarita Seshagiri. 2018. Privacy at the margins| The poverty of privacy: Understanding privacy trade-offs from identity infrastructure users in India. *International Journal of Communication* 12 (2018), 20.
- [52] Sharifa Sultana, François Guimbretière, Phoebe Sengers, and Nicola Dell. 2018. Design within a patriarchal society: Opportunities and challenges in designing for rural women in bangladesh. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems. ACM, 536.

- [53] UNESCO. 2019. UNESCO Literacy Profile Cambodia. (2019). <http://www.unesco.org/new/en/phnompenh/education/learning-throughout-life/literacy/>
- [54] Siva Vaidhyanathan. 2018. *Antisocial media: How Facebook disconnects us and undermines democracy*. Oxford University Press.
- [55] Aditya Vashistha, Richard Anderson, and Shrirang Mare. 2018. Examining security and privacy research in developing regions. In *Proceedings of the 1st ACM SIGCAS Conference on Computing and Sustainable Societies*. ACM, 25.
- [56] Mun Vong and Kimhean Hok. 2018. Facebooking: Youth's everyday politics in Cambodia. *South East Asia Research* 26, 3 (2018), 219–234.
- [57] Langdon Winner. 1980. Do artifacts have politics? *Daedalus* (1980), 121–136.
- [58] Pamela Wisniewski, Haiyan Jia, Heng Xu, Mary Beth Rosson, and John M Carroll. 2015. Preventative vs. reactive: How parental mediation influences teens' social media privacy behaviors. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*. ACM, 302–316.
- [59] Pamela JWisniewski, Heng Xu, Mary Beth Rosson, and John M Carroll. 2014. Adolescent online safety: the moral of the story. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing*. ACM, 1258–1271.
- [60] Reporters without Borders. 2017. Cambodia: The Independent Press in Ruins. (2017). https://rsf.org/sites/default/files/cambodia_report_eng.pdf
- [61] Mike Z Yao and Jinguang Zhang. 2008. Predicting user concerns about online privacy in Hong Kong. *CyberPsychology & Behavior* 11, 6 (2008), 779–781.