

Networked Authoritarianism at the Edge: The Digital and Political Transitions of Cambodian Village Officials

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This paper describes how village-level officials, relatively new to the Internet, use popular digital platforms on smartphones to supplement and extend long-standing patterns of information control and authoritarian power in rural Cambodia. They use these tools to monitor local affairs, report to the central government, and promote local government activities, practices which intimidate villagers and encourage their political withdrawal and self-censorship. This paper makes three contributions to the literature on networked authoritarianism and rural governance. First, technological changes currently underway in the Cambodian rural bureaucracy reflect a generational transition, as long-standing officials struggle to use new media easily or effectively, leading to new anxieties and breakdowns for these traditional holders of power. Second, bureaucratic information practices in these villages rely on material practices ranging from paper, face to face meetings, and loudspeakers, to new tools such as Facebook and smartphones - underlining significant continuities in mechanisms of bureaucratic power and control. Third, networked authoritarian practices conjure for villagers the historical links between information control and violence, and the effectiveness of these tactics on chilling speech is often rooted in villagers' memories of fear.

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1 INTRODUCTION

From Manila to Los Angeles, governments use emerging technologies to instill fear in citizens and close down public spaces of discourse. In this paper, we explore the relationship between technology and intimidation and show that, in some instances at least, chilling effects may emerge more from the lingering psychological effects of historical violence than the sophistication of technological tactics. To make this argument, we share findings from a qualitative study that examines how village-level officials in rural Cambodia (who are relatively new Internet users) utilize popular digital platforms to supplement and extend long-standing patterns of information control. They use these tools to promote local government activities, report to the central government, and monitor local affairs, practices that encourage villagers' political withdrawal and self-censorship. The use of digital and Internet-based tools to extend authoritarian power is part of a trend that scholars and the mainstream media refer to as "networked authoritarianism" [54], which is often characterized

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as a seamless, centralized, and powerful form of control (for examples about China and India, see [15, 45]).

These findings relate in turn to a long body of CSCW scholarship that has explored the forms and dynamics of digital governance [21, 25, 36, 43, 46, 53]. More recently, the field has begun to investigate growing problems of state information control and citizen responses [23, 57], including the persisting power of paper-based information control [27, 28, 33, 53]. Over the same period, CSCW has become increasingly attuned to the particular challenges and innovations found in computing in and from rural areas [16, 34, 35], including rural governance projects [46, 77]. This paper builds on these literatures and analyzes the shift in the Cambodian state's information infrastructures from paper to mobile phones and transnational digital platforms. We show how civil servants in rural areas seek to adapt and use new digital tools, including the limits and breakdowns of these efforts, the historical continuities between 'paper-based' and 'networked' forms of authoritarian control, and how networked authoritarian practices are grounded in historical links between information control and violence which continue to suppress rural speech and dissent in contemporary Cambodia.

In the lead up to 2013 national election, the increased popularity of social media, particularly Facebook, compromised the power of the state across the country. "Everyday Facebooking" [79] and "quiet encroachment" via social media likes and lurking [37] were tactics used by historically disenfranchised populations, including the rural and urban poor, to participate in politics and loosen the information control of the ruling party. In response, from 2017 onwards the government took steps to take back control of information at the national level through the regulation and monitoring of social media (e.g., the arrest of former opposition party officials for Facebook posts critical of the government [59]). This monitoring has led to widespread "chilling effects," a phenomenon that occurs when political activists and citizens stop using the Internet for dissent due to intimidation. These changes have led the Cambodian Center for Independent Media to call 2017 the year that "Cambodia's facade of media freedom collapsed" [29].

The story from the village and regional level – where the divisions between state and society are blurrier – is less clear. In this paper, we describe results from qualitative research in three rural villages in Cambodia, focusing on the ways that local officials and their families have begun to use Facebook and messaging apps, exclusively on smartphones, for monitoring local affairs, promotional activities, and bureaucratic administration. We show how these practices build on the long-standing surveillance and information control strategies of Cambodian village leaders. These leaders have been in power since roughly the end of the Khmer Rouge regime in 1979.¹ They are long-standing holders of power and are appointed through political connections and kinship ties, not elections. Between 1979 and the 2010s, they used standard information control mechanisms of state-controlled broadcast media and paper-based surveillance. We show how new smartphone and commercial platform-enabled practices build on these older practices. We also demonstrate the limits and challenges of these transitions, and the ambivalences they occasion in the government officials themselves. On one hand, they are associated with the promise of ongoing and expanded power, status, and convenience; on the other hand, they are associated with anxiety and shame, as some officials express fear at their lack of self-sufficiency and choose not to use the platforms or use them only selectively. For their part, villagers respond by self-censoring their posts and views to avoid oppositional discourse and/or withdrawing from Facebook and other social media platforms altogether.

This paper makes three contributions to CSCW scholarship on information control and rural governance. First, it shows how the technological transitions currently witnessed in the Cambodian

¹For more on the history of the Khmer Rouge, see [9, 18].

rural bureaucracy reflect a trend towards a generational transition of power. The long-standing officials cannot use new media easily or effectively and they are facing potential ruptures in their traditional modes of power. These observations lead us to conclude that networked authoritarianism is not as seamless or perfectly executed as mainstream media or academic discourse often describes. Second, we show how bureaucratic information practices in these villages involve a mixed ecology of materialities including paper, face-to-face meetings, loudspeakers, and feature phones, as well as new tools such as Facebook and smartphones. This point demonstrates the continuities between the modes of power of the traditional paper document and the modes of power of new material forms (Facebook and the smartphone). Third, we show how although networked authoritarianism is not seamless, it is still *effective* at chilling speech because it builds on historical links between information control and violence. It is the integration of emerging technologies into histories of violence and fear that causes intimidation, rather than the sophisticated use of the new technologies.

This paper opens by introducing three key bodies of literature that inform our analysis: literature on networked authoritarianism, histories of information control and the document, and theories of rural development and governance at the edge. We then move to our findings, starting with an introduction to the political and information contexts of rural Cambodia. Finally, we discuss how an analysis of information controls at the edge provide a quotidian picture of networked authoritarianism that accounts for the imperfect practices of government workers and the ways they build on historical forms of violence.

2 RELATED WORK

2.1 Information Control and Networked Authoritarianism

Information controls are "techniques, practices, regulations, or policies that strongly influence the availability of electronic information for social, political, ethical or economic ends" [49]. The Freedom of the Net Index classifies information controls via three categories: obstacles to access, limits to content, and violations of user rights [49, 54]. These include technical means like "filtering, distributed denial of service attacks, electronic surveillance, malware or other computer-based means of denying, shaping and monitoring information" and policies like "laws, social understandings of 'inappropriate' content, media licensing, content removal, defamation policies, slander laws, secretive sharing of data between public and private bodies, or strategic lawsuit actions" [49].

Information controls, when enacted by authoritarian governments, can extend their reach and ability to suppress or manage dissent, a phenomenon often referred to as networked authoritarianism [54]. China, for example, uses obstacles to access that include infrastructural and economic barriers to access as well as shutdowns and application-level blocking [54]. Russia relies on censorship and intimidation leading to the decline of oppositional political speech on the Internet [66]. The Russian government also controls mainstream (especially broadcast) media and selectively applies unrelated laws to dissuade opposition media [66]. Other governments (including, for example, Egypt, Uganda, Zimbabwe, and Iran) use Internet shutdowns, either of the whole Internet or specific applications or protocols, to control information, particularly during sensitive times like elections or protests [49]. These kinds of Internet authoritarian tactics are not bound by national lines. Authoritarianism also now extends its reach through networked social media into diaspora and refugee communities [58]. States also attack democratic Internets strategically, creating another form of networked authoritarianism [66].

Much of the literature on networked authoritarianism rests on an assumption that we are living in an increasingly polarized digital world. Scholars and mainstream media often characterize major practical and ideological differences between, on the one hand, Chinese/Russian models with public-private conglomerates and state-driven heavy-handed censorship and control policies and,

on the other hand, American/European models which on the surface call for "freedoms of the net," but also promote their own national corporate interests and capital-driven surveillance through "technocapitalism" [82] and "data colonialism" [4, 20]. Our own view is somewhat different - that any line between authoritarian states and the putatively liberal democratic orders of 'the West' were likely always overblown, and are in any case (and to our peril) fast eroding. Thus we recognize the presence of state-driven authoritarianism in the US and EU, no less than capitalistic surveillant and extractive practices in the Chinese and Russian spheres of influence. This includes deliberate population manipulation and the undermining of the credibility of science and credible public debate through media and social media. Political leaders in the US use these tactics flagrantly. For example, in March 2020, Twitter began "fact-checking" untrue tweets by President Trump and marking them as "manipulated media" [3, 12]. The broader trend of social media becoming crucial to the identities of politicians worldwide (see [14], for example, for the case in India) contributes to these more subtle forms of networked authoritarianism.

In this paper, we offer empirical detail to show how authoritarian governance is lived and problematize any broad-strokes generalizations about where authoritarianism might exist. We ask: what happens when we look at the dynamics of networked authoritarianism at the "edge" of the state, where the lines between the state and society are less clear?

2.2 Information Control: From Paper to Facebook

If digital tools, including social media, matter increasingly to how states establish rules and govern populations, such practices rely on a longer and older history of documentary and control practices [38, 69]. As writers from Max Weber [76] to Matt Hull [39] make clear, bureaucratic administration has long operated as a form of control enacted through documents. This state control is fundamentally tied to information processing; Beninger has shown the historical evolution of state control from the Industrial Revolution, which required fast information processing to avoid mistakes (like train accidents) and standardize prices across regions. The Industrial Revolution thus ushered in a new era of state control materialized through bureaucratic forms, importantly, through paper-based information [11]. Yates showed how similar systems and objects of control (including mundane files and filing cabinets) came to shape and constitute modern management [81].

Hull defines the concept of the *document* as "the material form of bureaucratic practice that shapes state governance and interactions between the state and society" [38]. Scholars of the document have shown how, like all technologies, documents engender multiple and contingent affects in their holders and transactors, including fear, panic, insecurity, nervousness, and tentativeness [60]. Ethnographies of the document pay attention to materiality. Documents are historically made of paper: typed, printed, and written in ink. Documents rely on the use of writing for information storage and transmission. This materiality accomplishes work outside of the content that documents carry; we cannot separate cleanly what we see outside of the material conduit of information [39].

CSCW literature builds on these anthropological notions of the document, sometimes to explain the remarkable 'stickiness' of paper in an increasingly digital world. Early work by Sellen and Harper explores the distinct and enduring affordances of paper and its incorporation into existing systems of management and control to explain the counter-intuitive 40% increase in paper consumption as offices transitioned to email as a primary mode of communication [72]. Ghosh et al. demonstrate the symbolic and practical value of paper in rural microfinance in Ghana and suggest that designers hesitate when they plan all-digital systems [31]. Marathe and Chandra [53] theorize about this continued persistence of paper as a node of power and exclusion in government systems. More optimistically, Finn et al. [28] show how the materiality of paper in welfare schemes allows citizens to participate in government in India and the US, showing how "the circulation of everyday government documents opens up the possibility for a population to gaze back and see the state."

Digital forms of representation build on the aesthetics, genres, means of distribution, and concepts of authorship and ownership that were developed through the medium of paper and the genre of documents [38]. Electronic things mimic paper in many ways; many electronic reading programs, for example, try to recreate the affordances of paper (annotation, turning page corners, slipping in bookmarks) [67]. Facebook discursively and aesthetically mimics paper things through its form: public communication happens through "posts" (parcels of mail) and "photos" (film photographs). These digital communications are hosted on "pages." These communications are displayed more publicly than they once were in their paper forms, indicated by the fact that they are shared on "walls," which in their analogue form typically separate public life from private life.

Scholars of the document have shown the ways that paper-based documents give rise to social inequality and marginalization [33], processes that are now replicated in electronic forms. CSCW scholarship around infrastructure has shown the myriad ways that marginalized actors can be systematically left out of large-scale information infrastructures through mechanisms like lacking categorical recognition [13, 73, 74]. The manifestations of these biases often disproportionately burden historically disenfranchised populations, including the poor who are compelled to use state welfare systems that are now digital and algorithmically-enabled [26]. As this work makes clear, shifts in the modality (or material form) of control have important distributional outcomes - providing more or less opportunity for participation or contestation around systems of authority and power.

We emphasize in this paper the continuities in paper-based and digital information control systems. We use this literature to ask: what can we learn from the power and persistence of paper to understand the dynamics of networked authoritarianism and its modes of control?

2.3 Information Control at the "Edge"

There has long been a tension in the political life of rural areas between autonomy and relation to the centralized state. Scott names the rural highland areas of Southeast Asia "Zomia" and charts the partial and tense ruling relationship between national governments and these semi-autonomous zones of the periphery [71]. One way that the state extends its reach into such rural communities is through the bureaucracy of international or national development [27]. Gupta has poignantly shown the significance of written documents in the bureaucracy of rural poverty amelioration development work. He argues that these paper documents and processes surrounding them contribute to the ways in which development work is systematically arbitrary in its consequences [33].

Our interest in rural governance builds on work in HCI and CSCW that investigates distinctive innovations emerging from rural settings, responding to these geographies' particular needs and opportunities [34, 35, 63, 75]. Though we are interested in rural places as distinctive, we also acknowledge the ways that rural places are always in the process of interacting with other places, including urban places, through population movement and material infrastructure. Here we draw on Burrell, who emphasizes a relational approach to studying rural Internet use, and argues that the material infrastructural bridges between rural and urban areas shape the experiences of rural people on the Internet [16]. We also build on Jang et al., who show the movement between rural and urban places in processes of repair of electronic things in remote places [44]. CSCW has also taken an interest in rural governance and e-governance initiatives, and the role of localized civil servants in enacting large-scale state projects. Johri & Srinivisan [46] study the differing ways that "enrollment agents" manage the infrastructure of issuing state-issued biometric identification numbers across India, when they are helping citizens with widely varying experiences and expectations for an ID. Veeraraghavan [77] describes the ways that rural civil servants are marginalized in relation to the centralized state but also display nepotistic and corrupt behavior. He then shows how these "last mile" government workers subvert e-government schemes designed for control of corruption.

We take the edge of the state to be not just a physical periphery but also a felt distance from a centralized government. We build on earlier work that describes how actions of low-level officials in outskirts of the central government blur the line between the "state" and "civil society" [33], and highlight complex power differentials within the state infrastructure. Mitchell argues that the "distinction between state and society is a defining characteristic of the modern political order" even though "the edges of the state are uncertain; societal elements seem to penetrate it on all sides, and the resulting boundary between state and society is difficult to determine" [56]. This metaphor of the edge helps us analyze the state not as a monolith, but instead as a set of internal hierarchies. Those with less access to centralized power reside on the edge (and might include other agents with less relative power, including women, disabled people, etc) [19].

These three bodies of literature - on networked authoritarianism, the document, and governance at the edge - give insight into the changing materialities of information control in rural Cambodia. We describe new practices of governance in villages and the ways that they build on long-standing information infrastructures of governance and control. While most literature on networked authoritarianism has, to date, emphasized a sophisticated national and cohesive set of information control strategies (for example, [54]), we emphasize here the ways that these practices are imperfect and partial. We suggest that the village-level officials have an uneasy relationship to emerging technologies, as they catalyze a cession of power to centralized agents and younger or more cosmopolitan people. We also describe the ways that control takes on a particular quality in these edges. In spaces where the blurriness between state and society becomes more apparent, so too do intimate forms of control (e.g., neighbors watching neighbors) and the complex hierarchies of state officials. This vantage point makes clear the ways that long-standing personal relationships between village leaders and villagers has led to a conditioned fear of information control.

3 METHODS

This paper is based on qualitative research conducted between September 2018-January 2019 and January 2020. Our findings are drawn from six site visits to three rural villages (in Kampot province, Takeo province, and Banteay Menchey province). Our access to each site was brokered through personal connections. We conducted audio-recorded, translated and transcribed interviews with twelve local officials across these sites, interviewing some officials multiple times.

Cambodia is primarily rural, with approximately 14.4 million of the country's 16.4 million people living in provinces outside of the capital of Phnom Penh. Cambodia is organized into twenty-five provinces; each province then is organized into districts, communes, and villages. As of the June 2017 commune election, there were 165 districts, 1,646 communes and 14,073 villages (UNDP). Commune-level leadership has, since 2002, been selected through an election. Village officials are not elected, as we will explain in more detail in the next section.

Eleven of our participating officials were village-level (village chiefs or deputies) and one was commune-level. All of these public officials were men older than 54, reflecting the composition of the local government. We also conducted a media literacy focus group with a group of six of these local officials. We interviewed additional village members at each site (non-government officials, recruited through snowball sampling) to get a broader sense of the community economy and social life (19 participants, 5 in village one, 7 in village two, and 7 in village three). We also participated in village events, including group dinners and a holiday celebration. All of this research was conducted in Khmer language and translated into English.

In addition to in-person data collection, we systematically reviewed Cambodian regulations and civil sector reports regarding the telecom and media sectors. We accessed publicly accessible government officials' pages on Facebook and the villages' Facebook pages. We additionally analyzed

the Cambodian and international press about national governance, information transitions, and the changing role of “e-government.”

Throughout the data collection period, we continually took field notes (recording data from informal conversations and participant observation) and iterated our research questions using analytic memos, based on a grounded theory tradition [52]. Upon translation and transcription of our interviews, we coded them thematically and analyzed them iteratively in conjunction with our field notes, analytic memos, and findings from public document review. Examples of codes included “adult children,” “paper to electronic,” and “monitoring local affairs.”

Our findings represent a subsection of the first author’s multiyear ethnographic project about digital technology and social change across Cambodia, including twenty months of research based in Phnom Penh. The results also build on the second author’s multiyear project focused on post-Khmer Rouge rural governance. This larger ethnographic participation has allowed us to contextualize our findings into broader phenomena across Cambodia.

The first and second authors, who conducted the field research, were clearly identified as outsiders in the villages. The first author’s race (white) marked her apart initially. The second author, though Cambodian and having grown up in a village setting, still had a privileged status in the villages as foreign-educated and a professor at a university in the capital. Our positionalities as outsiders to the villages limited our access in some ways. Some officials regarded us with initial guardedness because of the potentially sensitive nature of our questioning. Our positionality, at the same time, gave us increased access. For example, the first author’s positionality (American woman with ties to an American technology-related university program) gave her privileged access to village officials, as they recognized that she might be connected to modes of power (technology tools and trainings). Village officials regularly asked for sponsored technology trainings at the end of meetings. Additionally, because the second author was Cambodian citizen who pursued higher education and was an educator, we were often welcomed by the local authorities, who value higher education and teachers.

Our research is broken into two sections. The first provides an extended discussion of the historical and political context of rural Cambodia. This section uses both primary sources (interview data and document review) as well as secondary sources (scholarship of rural Cambodia). In spending time exploring these dynamics, we work within a trend emerging in CSCW of putting computing into greater historical context [48, 80] for a more complete understanding of our observed phenomena and accompanying social change.

The second section of findings is based on interviews and participation in three villages: *Village one* is in Kampot province (Southern Cambodia). Many villagers work in rice and fruit farming. The village is 20 km from a rural tourist area and some villagers work in tourism there. There is also a garment factory in the nearby provincial town (15 km from the village) and some smaller craft industries, like basket weaving, using natural resources and forest clearing. Many working-age people go to Phnom Penh for garment work, retail, and construction, as described in detail by [17, 32].

Village two is in Takeo province (Southeast Cambodia), approximately 30 km from the Vietnamese border. It receives significant rural development funds from the government and foreign agencies. The local officials have organized into a community development initiative to manage these funds. They have received funds from various donors including the Ministry of Rural Development and KOICA (Korean International Aid). The community also receives individual donations from the Cambodian diaspora. They use the funding for agricultural and educational projects. Like in village one, many young people go to the capital for better work opportunities.

Village three is in Banteay Menchey province (Western Cambodia). Most of the working-age villagers go to Thailand for better work opportunities in a variety of sectors, including housekeeping, construction, and farming. The Ministry of Agriculture provides funds for agricultural development.

We acknowledge that all villages in Cambodia takes on specific characteristics based on their distinct histories and the personalities of their leaders. We focus on the commonalities we found in each of these three villages to characterize phenomena happening across the countryside, but recognize the limitations in assuming village homogeneity.

4 HISTORICAL AND POLITICAL CONTEXT OF RURAL CAMBODIA

4.1 Rural Livelihood and Governance

In pre-revolutionary Cambodia, similar to today, villages were ruled by a village chief and sub-district chief [51]. The Khmer Rouge regime (1975-9) entirely disrupted this structure, collectivized agriculture and organized the population into work groups by age and sex. Approximately 1.5 to 2 million Cambodian died of exhaustion, malnutrition, disease, or execution during this time [50]. The regime also dissolved the old administrative system and established numbered zones, led by three-member ruling committees. These committees were mostly made up of outsiders, explicitly attempting to break bonds of local loyalty [51]. These committees made "every decision that affected people's lives: how much food would be distributed and to whom, who would serve in the army, which children would be assigned to mobile work brigades, who showed signs of disloyalty to the revolution, who would live in which homes, etc" [9]. Needless to say, the extreme violence and deprivation of the Khmer Rouge period has caused lasting trauma collectively in Cambodian society and personally for many Cambodians, often leading to variety of political self-protection activities [50]. As Ojendal puts it, "people in this context are generally sensitive to fears of resumed violence and the exercise of violence-impregnated power; especially if crude power is pursued on illegitimate grounds and by autocratic methods" [62].

After the Vietnamese occupation and fall of the Khmer Rouge in 1979, the People's Republic of Kampuchea (PRK) government re-established pre-war rural territories. The central government appointed three person ruling committees in villages based on who was most politically connected and had the strongest kinship ties in the village [51]. Most of these new officials were themselves soldiers, including some who had spent time as cadres in the Khmer Rouge. Many of them also migrated internally throughout Cambodia during the course of the wars [78]. Most of the village-level officials in the country, including in our three sites, have been in positions of power since this period, with some of them also having acted as soldiers within the Khmer Rouge at some point.

Though leadership has stayed relatively static for decades, the role of the village officials has changed dramatically since the fall of the Khmer Rouge. In the 1980s, during the active civil war, the primary job of village officials was to organize and provide more soldiers for militia groups. Village chiefs also administered locally organized groups or "Krom Samaki" (solidarity groups), which made up the basis of agricultural production. They then sold rice collectively to the central government and reported the activities of the groups to centralized agents.

As privatization began in the late 1980s and early 1990s, local officials coordinated land reform, distributed land titles and mediated conflicts [37]. With neoliberalization beginning in the 1990s, they also helped to manage development projects with international donors and NGOs [37, 51]. The management of these projects came with significant monetary gain for those in charge; in fact, the politicization of these projects and the ruling party's ability to use them to reward loyal village-level officials is arguably one of the main factors of their electoral success throughout the 1990s and 2000s. Local officials also have the power to reward some families and exclude others from work or benefit from development projects. [37].

Through the 1990s, village chiefs were completely entwined with the Cambodian People's Party, or CPP, (the party changed its name from the PRK to the CPP in 1991) and were often party activists [51]. In return for the patronage from party officials, one of the primary jobs of village officials was to report their surveillance of the rural populations for the ruling party. They were responsible for keeping track of local populations and their party allegiances. This reporting happened primarily in paper documents and in in-person meetings [37, 51]

Beginning in 1998, Cambodian central government agents, in conjunction with pro-democracy international donors, established some decentralization reforms including the onset of commune-level elections in 2002 [62]. The purpose of these reforms was to give more discretionary power and budget directly into local authorities' hands. Some scholars point to the limited efficacy of these reforms and that the local authorities have limited power and resources to deliver new services or respond to villagers' needs compared to the central government [24].

These historical dynamics make up the foundation for the administrative structure in contemporary Cambodian villages. Village-level officials are not elected; they are generally long-standing village leaders and veterans of the Cambodian wars which lasted in some form until 1998. The village chiefs choose the other officials for the village, including their deputies. The dynamics of the village-level governing group incorporate clear family relations and other kinship ties. Some relations follow a hierarchical "patron-client" form, where the superior gives gifts in return for loyalty, typical across the Cambodian governing context [61]. All of the village leaders we spoke to are now associated with the ruling party, the CPP.

All the village officials we spoke to are farmers (as are most rural officials) and organize resources for agriculture. Rice farming continues to be the primary activity in the Cambodian rural economy and rice makes up a culturally, economically, and symbolically core part of life in our three sites. An anecdote which illustrates this significance: "eating" in Khmer language is translated literally as "eating rice" or "*nyum bany*". A major (and controversial) duty of village officials is help resolve local land conflicts [32]. Because of the increasing difficulty of surviving economically on agriculture alone and land displacement, many rural people of working age now spend time in the capital or in Thailand for waged work [17]. Our participants described migratory experiences in each of the three sites we visited.

Other village officials' duties include mediating domestic disputes and providing commune and district officials with data about the population and land use. They represent the state in local activities (e.g., campaigning) [51]. The village policeman is in charge of security [51]. Local authorities are embedded within state hierarchy but have considerable discretionary power in local affairs, leading to occasional tensions between expressions of local autonomy and the state [32].

Village chiefs develop personal and heterogeneous relationships with their fellow villagers. Many are respected and feared for a wide range of characteristics including the history of how they led the village in the past. For instance, the histories of how they led militia recruitment, land distribution, and political campaigning all matter to their relations to their villagers [51].

4.2 Contemporary National Governance

From the privatization era in the early 1990s until today, two elite groups have been opposed to each other in Cambodian national politics. The ruling Cambodian People's Party (CPP), is hierarchical and tends towards the Chinese model of governing. They have been in power since the fall of the Khmer Rouge in 1979 (first as the PRK from 1979 until 1991). The other group, the Cambodian National Rescue Party (CNRP), is more closely associated with Western norms of governance and human rights, while also using xenophobic anti-Vietnamese sentiment in their propaganda [37]. Both parties exhibit strong neoliberal tendencies. National elections occur every five years. 2013 was a highly contested election, and the CPP won with a far smaller margin than they had in 2008.

This encouraged the ruling party to make major changes to make the populace more satisfied with their rule, including increasing the salary of local officials by 150% [37].

Our research began in August 2018, roughly a month after the 2018 Cambodian general election (July 29, 2018), which human rights advocates widely criticized for representing a rapid pivot to illiberal democracy after 25 years of democratization efforts [10]. On September 3, 2017, Kem Sokha, the president of the CNRP, was arrested for treason; the government cited a speech Sokha gave in Australia that referenced a partnership with the U.S. as grounds for his arrest [2]. On November 16 2017, the Cambodian Supreme Court dissolved the CNRP [55]. Finally, in July, 2018, the Cambodian general election took place with the ruling Cambodian People's Party (CPP) declaring clear victory.

In June 2017 (five months before the dissolution of the CNRP) there was a commune-level election. 45% of the commune-level leaders elected were in the CNRP. When the CNRP was dissolved in November 2017, all of the CNRP elected commune officials were forced to resign and ruling-party (CPP) officials were given their posts.

4.3 Information Transitions

In Cambodia, information laws, state sector Internet strategies, and freedoms of speech are in an extremely dynamic moment as the Internet becomes more popular. Emerging from the wars in the 1970s and 1980s, Cambodia had minimal landline telephone infrastructure. Upon privatization reforms in the early 1990s, Cambodia had one of the highest mobile phone rates in the world [6]. Today, Cambodia's mobile penetration is over 100% (118%), because people have multiple SIM cards [1]. Starting in the early 2010s, Internet-enabled mobile phones became cheaper and more common. In the past six years, increased access to mobile broadband has dramatically increased Internet penetration, which has grown from 6% in 2013 [1] to 84% in 2018 [65], based on mobile Internet subscriptions. Fixed broadband subscriptions have been in decline since 2012; these subscriptions are almost exclusively in urban areas, but mobile Internet is largely available in rural areas [1].

Facebook is by far the most popular platform for Cambodians to use the Internet [40]. Telegram (a transnational platform with a Russian owner) is increasingly being used by government officials, particularly at the commune level and above, because of perceived greater security. As we discuss in the next section, at the village-level, most officials use Facebook when they use the Internet at all. In village two, some officials also use a Telegram group that the commune administrator set up for them. The Telegram groups and the Facebook Messenger groups have similar functionality.

Media infrastructure since the early postcolonial period has been tightly linked to the authoritarian state and foreign interference [41]. The rapid increase in mobile-enabled Internet connectivity in rural areas has challenged historically state-controlled media channels such as radio and TV. Scholars have argued that rural and urban people, traditionally disenfranchised from political participation, became more politically active during the run-up to the 2013 national election because of increased access to discursive discourse on social media. Political participation on social media did not often take the form of overt calls for political change, but rather calls for shifts in "everyday" issues [79]. Hughes and Eng argue that the rural poor in this period were far more likely to "share" and "like" newly available political and oppositional information but it was uncommon for this demographic to write their own political opinions via comments and posts. They call this form of political resistance a "quiet encroachment on real-world distributions of power" [37].

The ruling party's media strategy was a core part of the 2017-2018 authoritarian tightening. Facebook and the Internet more broadly came under more scrutiny and, before the end of 2017, seven people were arrested for statements against the prime minister on Facebook [29]. In May 2018, the Ministry of Interior, the Ministry of Posts and Telecom, and the Ministry of Information declared they could monitor and control the Internet and make arrests based on online activity [5].

The week before the July election, access to independent news websites was cut off in Cambodia [68]. These authoritarian strategies have increased since the beginning of the COVID-19 crisis [47].

Because of these new information rules, in the run-up to the 2018 election, many users felt much more constrained in their use of the tool, back to a sort of status quo of restricted freedom of speech. Cambodians across demographics report avoiding posting politically sensitive material on Facebook [42]. Beban et al. empirically show that, for opposition-leaning journalists, social media once felt like a space of "both emancipatory and authoritarian potential." They argue "that the Cambodian state's crackdown on media is part of an ongoing transformation of authoritarian populism that has reduced the space for rural collective action" and that "the crackdown signals the loss of a more emancipatory, democratic imaginary" [8].

In addition to new information rules and controls, pro-government political activity on Facebook is encouraged by the state and is a part of many government workers' jobs. Government workers feel social pressure to use Facebook to support the ruling party. One of our participants in Phnom Penh who works for a ministry told us that she made a Facebook account because she needed to for her job (this participant and the following come from our broader ethnographic project). Another 33-year old male from Phnom Penh told us,

[Government workers] do have to attend events with their boss where you have to wish so and so a happy birthday, or you have to share [on Facebook] fresh news on wherever the boss is going. Or you hear of an institution whereby if the boss posts something, everybody should like it. The line between professional and personal is less clear, especially during campaign season, for example. I don't know if there's repercussions, but it's at least socially frowned upon if you don't engage in some sort of, "share activity," we call it.

5 DIGITAL TOOLS AND RURAL GOVERNANCE

We now transition to the ways that village officials use Facebook and smartphones in their work. We group these digital governance activities into three types: (1) groups chats and monitoring local affairs, (2) reporting to the central government, and (3) promoting local government activities. We then discuss the limitations of these activities, and point to officials' (1) limited media literacy, (2) their worry and fear, and (3) their non-use, partial use and workarounds. We then address how villagers respond to these activities, including chilling effects tied to fears of historical violence.

5.1 Digital Tools and the Work of Governing

5.1.1 Group chats and monitoring local affairs. As discussed in the previous section, the police and the village chiefs work closely together to monitor village affairs. They keep track of everyone who moves in and out of the village. If there are fights among young people, the village head needs to inform the police to intervene. Also, people are obligated to inform village heads if there changes in their family demography. These are monitored on paper documents, such as lists of residents. These documents are shared in face-to-face commune-level meetings weekly, biweekly or monthly depending on the particular village and its distance from the commune-level town.

Since 2017, in addition to these traditional methods, local authorities also started to use Facebook Messenger groups and Telegram groups to discuss community activities and perform casual surveillance on the villagers. Across all three villages, participants in the Facebook/Telegram groups include village chiefs, deputies, police, and commune-level officials. Commune-level officials manage and administer the groups.

In village one, Pboo (all names are pseudonyms) uses his Facebook group to share pictures of major village news, which makes his reporting to higher-ups quicker. For example, he says,

"We will send information over the group if there is a problem that would affect everyone. Things like disasters, flooding or any kind of risky situation..."

Sometimes these groups are used for beneficial information, like best practices for work. For example, in village three, the Ministry of Agriculture has set up a Facebook Messenger group chat that many of the committee members use to communicate about farming best practices. Vuth likes to use YouTube to get more information about agricultural programs, *"like how to raise chickens and cows and to plant rice and vegetables."* He uses this Facebook Messenger group to send videos and documents related to the agriculture products that he plans for his home to show to others on the committee. He says,

"I use [our Facebook group] to send some documents related to agriculture products that I plan at home to show to my friends [who are also officials] by Messenger."

These groups, however, are also used for new forms of surveillance. In village two, the officials use the groups to report when new people enter the village as a way to monitor populations and political party enrollment, something that is noted as a key part of the village officials' workflow. The number of people who have entered and left the village are key pieces of information that the village officials track on a monthly basis and share with the commune-level officials. One village official in village one says, *"When there are certain number of newcomers in the village, then I just take pictures of these new people and send the pictures to the group."* They also report new people who turn eighteen and are eligible to vote and those who have passed away.

Disputes between villagers are another frequently monitored issue and these groups are a way for the governing bodies to understand, track, and keep all interested groups up to date. Sometimes, however, these disputes can be controversial. Pboo gives an example of sharing information about land disputes. He explains,

"One serious situation that we use our group for is if there is a land dispute. We can send information about this on the group so that everyone knows that there is an issue in this area that can't be solved. Now, if one of the parties has a land title, it is will be under the supervision and policy of the Ministry of Land Management, Urban Planning and Construction. But, since we are the local authority, we have to know what are the root causes of an issue and if they can agree or not on the issue. If we can't solve it, we will send the case to the commune-level leader. The commune-level leader will then negotiate to meet the correct standard, and if one of the parties does not agree, they case will be sent to the municipality. And, the land management will be responsible for this. The purpose of sharing this information is to inform that there is a land issue in this/that area, so everyone knows this. It helps when we can all solve the problem together. Some people take pictures about the land issues like land grabbing and share in the group."

Officials gave myriad other uses for the group sharing. They include: sharing when the roads need to be cleaned or have been cleaned or if there are reports of drug use or burglaries.

These groups build on and supplement the mixed ecology of communication technologies used between village officials, historically present in monitoring infrastructure, such as paper documents, meetings, and phone calls. One of the village officials (the village protector, or policeman) also speaks on walkie-talkie (which he calls an *Aircom*), which is also used by the maintenance team. The village protector says he primarily uses the walkie-talkie to keep track of suspicious people.

5.1.2 Reporting to the central government. Local officials send paper reports and documents via Facebook Messenger or Telegram to officials at the commune-level and higher. This sharing also happens via Facebook newsfeed; for example, they share an exam schedule or a vaccine schedule as photos of paper documents on the walls of their personal pages and the page of the village.

One village official, Mek (village one), takes pictures of documents for his own personal purposes. This practice is convenient, easy, and done without much self-reflection. As Mek shows us some of his documents on his phone, he says,

"See, this one is about road building and charity event nearby the factory, and this one is supporting the elderly... This one shows the village population, number of villages and its number of families. I took it for my personal purpose, in case I forget to bring my documents to the monthly meeting with the commune administrators, I can look at it."

Officials in village two send their reports to the commune-level by Facebook Messenger. The village officials have to follow the workflow from the central government, including reporting to the Phnom Penh-based Ministry of Rural Development and meeting with commune, district, and province heads at certain times in the funding cycle. The community has always had to report their progress and send a population and financial report to the provincial level monthly, which they hand-write. Now they send this report as a photograph via Facebook Messenger. Sokhun, the village chief, is happy that he is able to send the report by Messenger because it replaces the need to deliver the report separately to the commune level, which often required a special trip on motorcycle from the village to the larger town. The committee still receives their paper reports during meetings with officials from larger towns. The convenience of sending back with a smartphone is valuable.

The materiality of looking at the paper documents on the smartphone is striking. Digital reproductions of paper make clear that the shifting materiality of bureaucratic administration maintain older processes and forms of bureaucratic control.

Although many of the officials like the convenience of using Facebook and their smartphones in these ways, some resist. One official (village one) reports his preference for paper. He says, *"As you know we'll have evidence if we use paper. The technology helps us to know, but there is no evidence like written paperwork."* We note here the overlapping use of the historical media form (paper) and new form (electronic platforms). This quote emphasizes the centrality of paper in the historical governance projects, its continued power, and the creative ways that officials mix it into new material forms.

5.1.3 Promoting Local Government Activities. Facebook is being used by local officials and their families to promote, advertise, and get 'credit for their activities and accomplishments from the central government, donors, and other stakeholders. In addition, it is used to post announcements such as meetings and community activities to villagers. It is also used as a channel to promote the ruling party during election periods and to recruit more development funders (NGOs, states, or individuals) through general advertising on their village page and sending directed messages to key individuals. Mek (village one) puts the benefits of the platform for village communication this way:

"I use my phone to communicate in the village... it is fast for communicating any issues, especially compared to mouth to mouth... In Facebook, we can also share information that serves the benefit of our society."

Sometimes these announcements are used to gather people for meetings. Mek continues,

"If there is a land title working group coming to the area, we make an announcement to villagers to join the meeting to know about land measurement. The land management team has invited us and villagers to meet together. We post on Facebook to make sure everyone can see the announcement."

Many village officials emphasize how important it is for them to post the activities and accomplishments of the local community on their Facebook page. This indicates to their funders, including the Phnom Penh ministries and foreign donors, how they have used their funding. One participant says that the Facebook wall activity is the way that their bosses keep track of their work. Village

two has a designated village Facebook page where they write about new educational programming, special donor visits, and holiday celebrations. One particularly active young man, Pagna (aged 29), is now administering this page for the local officials. These activities also get posted on the local officials' personal pages. Sokhun (village two) takes photos of the community development events and his kids will post the activities on Facebook, including on their own personal Facebook pages, on the page of the town, and on Sokhun's Facebook page. Sokhun shows us photos of different village activities that his kids have posted on Facebook.

Another way that officials use announcements on Facebook is for explicit government propaganda and campaigning. During the two weeks of allowed campaigning before the 2018 election, the local officials posted about the pro-CPP events that they hosted in the village.

Announcements are also used as a way to encourage more foreign fundraising. Pagna's goal for this page is to raise more funds from international donors and through relative networks of the community members. Pagna has written some of the Facebook page in English (though few people in the village speak and read English) because he hopes then it will garner an international audience. He explains, "*Khmer people don't have a lot of money; foreigners have money.*" Pagna also sends village updates to individual donors via Facebook. He targets individuals who are related to members of the village who now live in Phnom Penh or internationally to ask for donations.

These Facebook announcements should be understood within a broader ecosystem of announcement technology, which include historical ways of announcing news. Rithy (village one) says that for a big public campaign, such as an immunization drive, the officials will use Facebook as just one of many ways of getting word to the villagers. They also put the information on a banner and use a loudspeaker to announce the news. They also visit villagers door to door for special announcements and campaigns.

5.2 The Limits of Digital Governance

Though the officials are using new digital tools on smartphones in various ways to supplement their governing activities, they all feel somehow behind the curve in the technological transition and that they are using the new tools imperfectly. The village officials have limited media literacy and report high levels of worry and fear around new technologies. They want to have more control over these new technical modes as they recognize how closely they are tied to power. Here we also report how some officials refuse to use digital tools. We also describe how villagers themselves have withdrawn from Facebook due to officials' activities.

5.2.1 Limited media literacy and intermediated access. In each of the three villages, the village-level authorities generally do not feel confident with their level of digital literacy. They were all born before the wars of the 1970s and educated during the Sangkum Reastr Niyum ("Community of the Common People," 1955-70, see [64]) period and their education was uniformly interrupted by war. In Cambodia, the literacy rate for people 15 and older is 80% but the literacy rate for people aged 65 and older is only 53% (UNESCO). All of these officials have their own smartphones and Facebook accounts (a relative luxury) but have limited technical skills, some telling us up front that they do not feel comfortable at all using their smartphones and that they are resigned to the fact that they cannot learn at this point. One says that he still prefers to use his feature phone to make simple calls. Below is a sample from our field notes to illustrate this point, as well as set the scene:

The village official Sokhun invites us into his home. It is the ten days leading up to Pchum Ben (ancestor worship day) so we can hear villagers and music recognizing them at the wats nearby (it is the Dat Ben days). Sokhun's daughter, in her mid-30s, gives us lunch including the Dat Ben special sticky rice. Sokhun tells us about recent funding that a

Korean aid organization gave to the village for community development. With it, they are trying to build various programs for the village focusing on education, agriculture, and business development. With part of the money, the village leaders built a community center. After lunch, we walk to the community center, which is behind Sokhun's home. To find it, you exit the back of the house through a gate and walk on a small path out to the fields. A cleared area amongst rainy-season bright green rice fields holds a community building, two school buildings, a playground, and two toilets. The community center is in the middle of an active agricultural area, farming primarily rice. Smaller vegetable gardens are wet with rain. One of the buildings has a small library and the books smell musty; most are NGO donations and are in English. We hang out with a group of teachers and I (first author) give a question and answer session. I explain where I am from, what I am studying and what my educational background is. After we finish, we do an interview with the village chief. We start with a one-on-one interview. Four other village officials come to listen and start to interject, so we end the first interview and open up the conversation to the rest of the group. One official says, emphatically, that he understands that technology is a way to get ahead in his job, but that right now there are limited ways that he can use Facebook. He wants to post pictures about the community development program which allows them to get attention to get more funding, from foreigners and from the ministry of rural development. They hope they also might attract more volunteer support. They all enthusiastically agree that this is a very important and interesting topic. They complain that phones and Facebook use too much English terminology and have too many functions to remember. They want to have new ways to learn more about technology, in Khmer language. They ask if I will do a training. Later in the evening, over dinner, one of the officials comes up to me (first author) and asks why he can't take a photo. I try to explain that it is because his storage is full.

The commune official whom we interviewed (who is a rank higher than a village official) confirms that village-level officials often have trouble using new digital tools. He says that the central government has focused their efforts on training commune-level officials and above and neglected training for village-level officials. Commune assistants play an important bureaucratic role, and often coordinate between village-level authorities and district and provincial level authorities. These commune assistants need to pass an examination, tend to be younger, often write well, and are sometimes quite technology-savvy, particularly in communes that are more accessible to the capital.

Another reason that using Facebook is challenging is that it uses English terminology. Even when written in Khmer script, words like computer and Internet are English terms. The content of Facebook includes more English than Khmer words (for more on this theme, see [42]). This means that there are often functions they have to memorize and they have trouble understanding and navigating a lot of content.

Sometimes officials feel more comfortable with the personal uses of smartphones and social media than the professional ones. Our officials report recreationally using their smartphones and Facebook for keeping in touch with family. They report that their kids send pictures of their grandchildren to group Messenger chats. Mech, for example, reports that he does not feel comfortable using his phone often. He grumbles, "*I just use it to see about my grandkid, when he cries or something.*" He also uses Facebook Messenger to talk on a video call to a relative abroad in Australia, often in the presence of other family members.

Many village officials use Facebook with the help of their adult children, to various degrees, building on theories of intermediated access [30, 70]. None of them set up their own Facebook or

Telegram accounts; their children, friends, or cell phone shop owners set up their accounts instead. Though they use their own accounts (with their own pictures and names), they sometimes share their accounts with their family. Sokhun (village two) says, "*I can take photos and check it [Facebook] but my kids post for me.*" We ask about his children and he tells us that they work in Phnom Penh and are aged 28 and 29. They have already finished their bachelors degrees. He continues, "*When they come home to visit, they make postings for me.*"

Pagna works for a mobile remittance company in Phnom Penh and comes to visit the village most weekends (Soheat, one of the committee members, is his father-in-law). Pagna says the dynamic between the elders and young people like him, who are related to the officials, is quite close because they meet each other to work on projects like this. Young people (particularly himself) act as the "*backbone to support the elders*" when needed for tasks like proposal writing and brainstorming. "*The elders are implementers,*" he continues. He is the one who helps to raise funds and resources for the community.

These intergenerational supports are not unanimous; one official in village one says that he does not ask his kids for help, even though he muses, "*nowadays, kids are smart.*" He doesn't want to bother them, as they are busy with their own jobs. Instead, he asks a friend for help when he needs it. Another official admits he is ashamed to ask his children for support on IT issues.

5.2.2 Breakdowns of power. Our participants worry a lot about the ways that the information on their phones can be used against them. Soheat tells us he knows that he could have a problem, like a hacker, but he doesn't know how to protect against this sort of thing. Sometimes he avoids using Facebook and doesn't do things he isn't familiar with. Because of their unease and limited technical know-how, the officials take minimal security precautions and use these tools in restricted ways. For instance, none of the officials use Facebook passwords or pincodes for their phones. Additionally, none of them use email. Despite some concern, all of the men use their phones to read news, including political news. Mech also writes his ideas about politics. He says he writes "*only about the good things that I agree with.*" For the things he doesn't agree with, he just "*doesn't write about those.*" We ask our participants if they ever worry about writing about political things on Facebook because of possible consequences from the central government. Mech replies, "*yes, I have some worry. That's why I don't write the opposition opinion, I just write about what I agree with.*"

In village two, the group of village officials while in a focus group unanimously tell us that knowing how to use Facebook in a more sophisticated way is important for their careers and that not knowing about this new technology makes them nervous for the future of their political power. They fear that knowing about technology is a way to succeed and get more responsibility as officials. They also must be able to protect their secret and confidential information.

Their fear that technology can lead to a loss of power builds on their long experience in a volatile and violent political reality. Mech's biography exemplifies the complex political identities for these local officials. From 1970-1975, Mech was a soldier for the Khmer Rouge against the Lon Nol regime. In 1975, he injured his face in a grenade attack (and still has a large scar and bone damage on his face). The Khmer Rouge regime (1975-79) was a difficult time for him, even though he was on the side of the Khmer Rouge. He tells us that he was lucky, though he could read and write French, the Khmer Rouge sent him to work in northwest Cambodia and he survived. He met his wife during this time (she was also aligned with the Khmer Rouge) and they married in a communist wedding. His wife led a kids' work camp. In the 1980s, they went to a refugee camp on the Thai border, where they lived for three years. After that, they moved back to Southern Cambodia where his wife's family had lived before the war. These kinds of wartime experiences make the worry and fear that these local officials have about loss of power take on a particularly strong valence.



Fig. 1. Donated desktop computers sit unused, still wrapped in plastic, without stable electricity or broadband Internet in the village

5.2.3 Non-use, partial use, and workarounds. Though some officials feel somewhat comfortable posting pictures and even commenting in groups, many do not. Some lurk in group chats and simply scan them for information. They lament that if they knew how to use the tool better, they could do their job more quickly. One chief, Ro (village one), says this,

"I normally scroll Facebook, but I have never chatted with anyone.... The commune said they will provide training to people who don't know how to use it. The commune wants us to learn, but I haven't had time yet... If I used Facebook, it would be quicker [to report my activities]. Let me show you... This is the group. I can scan the pictures but I don't post."

Non-use is not only a matter of literacy, but sometimes also a matter of personal discretion. Pboo explains that he is careful about what he shares and deliberately keeps to himself information that might lead to a villager "losing face." He gives an example of domestic violence. He says,

"There are things we will share and things we do not share. For example, we don't share incidents about domestic violence because we want to 'save their face' and we will try to negotiate with them to see what is the root cause of the violence. So, when we find it, we solve the problem and mediate with both parties. Mediation is key, and then we don't need to use the group. But, if it is serious violence, we will talk about criminal punishment. We always advise them not to use violence. But we can often solve real problems onsite."

Although (as we reported in the above section), some officials share documents via Telegram or Facebook Messenger groups, higher-up officials lament that there is no functional public infrastructure for document sharing at the village-level. The Facebook and Telegram groups have become a work-around for the "non-use" of a more official public information infrastructure. There have been a number of funded e-government initiatives to make a centralized repository for e-documents; however, these remain non-integrated and there is no centralized e-document server [7, 22]. These e-government initiatives are used on desktop computers which are used only at the commune-level and above. None of the villages have working desktop computers. Village two had recently been given donated computers a few months before we visited, but they remain wrapped in plastic and gathering dust (Fig. 2). Electricity is not stable enough in the village for these computers to run uninterrupted, and the village does not have broadband Internet.

5.2.4 Villager self-censorship and withdrawal. In this section, we transition to a discussion about how villagers use digital tools and respond to the activities of the officials. Villagers respond to the new digital workings of the state in heterogeneous ways. Some use Facebook and smartphones

without fear, or even without much self-reflexivity. Non-party affiliated villagers are not required to follow village pages or the personal pages of officials and they often choose not to. Other villagers do not particularly care about state control on Facebook. Some report doing relatively frivolous things on Facebook; for example, they are looking at online shopping or friends' pages. Participants like this are not often bothered by how the officials use the tools.

Other villagers act in strategic, protective ways in response to the intimidation and felt presence of local officials. They withdraw from overt political activity and refrain from identifying with any oppositional thinkers, both offline and online. All have stopped displaying opposition party placards on their houses. Others cease their association with opposition-affiliated public figures in their villages (third party analysts, former elected commune officials, leadership in schools or wats). Some withdraw from the village coffee shops where political activity is normally discussed.

We also saw evidence of chilling effects and fear about writing political things on Facebook or otherwise exposing themselves as opposition party-affiliated online. Some villagers are clearly afraid of how the officials may pay attention to what they post. A villager in village three told us:

"Normally, I don't look at much on Facebook because I'm afraid that I might click on the wrong thing and I might share it to others. I heard they'll catch [alternate translation: arrest] those who post or share about political news. So, I think I'll just listen to the radio."

Some connect their fears now to the ways that political regimes have historically worked in Cambodia, including the devastating Khmer Rouge regime. One participant in village three told us:

"I don't share. During the Pol Pot time, we called them [the government] the angka pnaik manna (pineapple eye organization). Because they can see like this [hands point out frenetically towards the space in each direction around him]. I feel afraid... I feel like this and I will not share about politics."

Though this participant did not live through the Khmer Rouge period himself, the inter-generational trauma emerging from that period is so significant that he still highlights its relevance to political structures and media governance in Cambodia today.

6 DISCUSSION

In this paper, we introduced the rural governance structures of Cambodia, their historical legacies, and the information and political tensions that are ongoing across the Cambodian countryside today. We then described the ways that village officials are using Facebook and smartphones in their jobs in limited ways, adding to long-standing technologies of control including surveillance documents, face-to-face meetings, and loudspeakers. These new control practices have contributed to the chilling of oppositional speech and political withdrawal. These dynamics lead us to three arguments – on the generational transition of power, the mixed ecology of media, and the historical legacies of information control – that we describe in detail below.

6.1 State Power at the "Edge" and Ruptures of Control

Our first argument is that the technological transitions we are witnessing in Cambodian rural bureaucracy are messy, uncertain, and tentative. For most village officials, the technological transition brings excitement around new forms of power as well as the fear of its loss or displacement to others. These tools enhance local power in two distinct ways: practically, by offering affordances that, if mastered, can enhance the efficacy of control; and more performatively, by presenting local power holders as confident masters of a new and emerging form that cements their status as leaders of a new Cambodia even if they require help from their more technologically savvy adult children and supporters to deploy these tools.

In practice, however, the digitization of bureaucracy and control in this setting is not as seamless or perfectly executed as mainstream media or academic discourse on "networked authoritarianism" often assumes. The additions of Facebook and smartphones into Cambodian village bureaucracy take on complex and emotional forms for civil servants, while giving rise to breakdowns in practice. Responding to literature on "networked authoritarianism" [54] this case shows the ways that the state is not a monolith but is instead enacted by real people using digital tools in messy and not-always standardized ways, eliciting worry, fear and anxiety – even among groups nominally in charge of these transitions. Unsurprisingly, the power of these tools and uncertainties in their use breed anxiety and fear on the part of local power holders. Officials are afraid of losing power if they can't control the technology. They also fear negative consequences, including political marginalization, if they are hacked or mistakenly disseminate the wrong kinds of information.

This fear acknowledges a reality: while all actors seek to take advantage of the rapid changes associated with technology, some do so more effectively than others. Specific members of the local committee, for example, are more able to use or broker access to technology. The technology generally favors younger and cosmopolitan users over older and less tech-savvy officials. Many of the authorities in our study represent an old-guard of power in Cambodia. Most gained power as soldiers in some of the darkest moments of the country's history, often during and directly after the fall of the Khmer Rouge. Thus, tied up with this material transition is a political one: in the coming years, many of these officials will be replaced by new generations. The move to digital tools is thus also caught up in a generational shift in power, and are part of the process by which local structures of authority are transitioned, mediated, and rebuilt. This technological change and its corresponding generational power shift, however, is significant in that it marks a new division in power structures that have lasted with only incremental change for the past forty years.

The messiness we observe also relates to the ways these information practices are coordinated between the central government and these local officials. These practices are being developed across power differentials between rural officials and their relation to Phnom Penh government, commune-level administrators, and foreign donors. Speaking to CSCW literature of rural computing [35] and rural governance [77], we see how these patterns resemble the ways that rural areas often exhibit tension between autonomy and reliance on the central government [71]. We argue that these power differentials are characteristic of governance at the edge, which represents not only a physical distance (urban to rural 'periphery') but also a felt distance from centralized power.

6.2 Material Transitions and the Continuities of Control

Our second argument is that village officials are currently using both historical media (primarily paper) and new media (transnational platforms and smartphones) and this mixed ecology illuminates the continuities in the power dynamics of information control across media modalities. Our empirical data captures a relatively brief moment of material transition. These local officials are trying to use new tools (Facebook, Telegram, smartphones) to supplement their long-standing practices of village-level surveillance and public information control (meetings, loudspeakers, telephone calls, and paper documents). They both cling to old forms and accept new materialities. Based on our empirical observations, and working from Hull [38, 39], Marathe and Chandra [53], and Finn et al. [28], we suggest that smartphones and platforms now act as a sort of "document"; that is, that smartphones and platforms make up a new material reality of governance in contemporary rural Cambodia. Highlighting this shift puts contemporary forms of "networked authoritarianism" [54] in historical perspective, and demonstrates the ways that new governance activities build on longer traditions of information control and bureaucratic practice.

For instance, officials have Messenger groups where in which they report suspicious people and keep track of potential voters. They use the groups for information sharing and gathering

about happenings in the town and best practices. The groups replace and supplement older forms of technology like walkie talkies and feature phones. Posts and photographs on the village and personal Facebook walls report on community activities, building on older forms of announcements like public speakers. Facebook is now a conduit of digital representations of paper documents, replacing and reducing post and delivery. The platform now replaces and supplements what was once captured in paper documents, including donor reports and grant applications. Officials send digital photographic representations of paper documents. All of these functions happen via the smartphone, a mobile, battery-powered device that fits the environmental constraints of the village, including spotty electricity, no fixed broadband Internet, and a largely outdoor lifestyle.

Why might it matter that Facebook and smartphones now act as *documents*? This conceptual frame illuminates yet another way that multinational technology companies are gaining power in the contemporary moment. Facebook is designed and built far from where it is used here at the "edge." This tool works only partially for these officials because it was not designed for them [42]. Whereas before this transition, paper was not (overly) commercialized, Facebook is now making advertising revenue on all these government activities. These tools are extractive from a political economy standpoint [20] because they are taking revenues from the Global South to centers of capital, such as Silicon Valley. Further, using a commercial platform as the basis for a public infrastructure raises important privacy and security concerns. Whereas a public infrastructure would ordinarily be designed with values of national sovereignty and security in mind, the current state of affairs cedes power to Facebook to set policies on privacy and data management for government affairs, which the company has done poorly to date [42].

Though these new materialities change power dynamics between technology companies and the Cambodian state, the conceptual frame of the document also makes clear the continuities between paper-based forms of control and these seemingly new digital modes of control for the power dynamics between village officials and villagers. We have shown that the Facebook and smartphone material conditions are building on paper-based forms of information control in direct ways, and act in a media environment that continue to include these older forms. We therefore build on CSCW literature on the persisting power of paper [28, 31, 53] in digital government systems to show that - even when government officials are obligated to move into new digital systems - they still harken back to paper's form and modes of power. Building on our first argument, these continuities help to explain why it is that, though networked authoritarianism is imperfect, it is still *effective* at intimidation and chilling effects. We suggest that one reason these practices are effective is *because of* their links to older forms of information control, which, in turn, have been tightly linked to violence in this context, as we now discuss.

6.3 Histories of Violence and the Intimacies of Control

So far we have argued that the technological tactics of control that the village officials use are often patchwork, using a mixed ecology of media forms in their updated information control strategies. The officials, uncertain about new technologies, may be losing power because of these material transitions. Our final argument is that officials are nevertheless still able to chill villagers' speech and contribute to the closing down of a public space of discursive dialogue. These technological tactics work at chilling speech because of the links between fear, information control and historical violence. The villages in which we conducted this research have a recent history of violence. The village officials who are using these new tools are the same people who led these villages through the PRK period, the privatization period, and the most recent "authoritarian turn" of 2017/2018. They have personal and intimate relations with their neighbors whom they have governed for decades, including through extremely violent episodes. The response of the villagers that they

govern are inevitably conditioned by direct and intergenerational trauma that links information control to violence in clear and direct ways.

This point raises another contribution of this paper regarding the intimacy characteristic of control at the "edge," where the boundaries between the state and society are less clear. Village chiefs and their deputies are governing their neighbors. Digital tools now supplement long-time intimate surveillance that can only be performed by people within proximity. As may be common in any small, insular community, newcomers are monitored and tracked, and now this surveillance is spread more quickly to higher-ups via electronic messaging. Other practices of information control enacted by village officials lead to fear, chilling effects, and villagers refraining from oppositional speech or even reading critical political news on the Internet. Our results suggest that these chilling effects result as much from everyday administrative activity and the ways that the government is visibly present on this channel of communication as from overt censorship and arrests. Government presence on Facebook (for example in propaganda campaigns around the election) softly intimidates non-state actors, adding to the non-virtual presence that these officials already have in village life. These tactics have contributed to the removal of a public space of dialogue and open debate. This comes to matter in particular in Cambodian villages, where the history of war and the palpable memories of violence in these communities make these intimate forms of control both poignant and effective, raising the stakes and the resonance of emerging control mechanisms. For some villagers, the lines between information control, power, and violence appear dangerously thin.

7 CONCLUSION

In this paper, we described the ways that Cambodian village officials use Facebook and smartphones as tools of governance and control. Scholarship on networked authoritarianism often paints a world of centralized and sophisticated strategies of information management, censorship and control. But this may take power too much at its word, understating the precarity of efforts to establish and maintain oversight and governance, whether paper-based or digital in nature. The perspective from the edge gives us a better understanding of the partial and uneven ways that networked authoritarianism is accomplished (or not) in practice. We make three sets of arguments. The first argument is that the officials' anxieties around emerging technologies reflect an ongoing and real generational transfer of power, from those long accustomed to rule in local settings towards a younger and more technology-savvy set of actors. The second is that the materiality of government work is transitioning from paper to smartphones and transnational technology platforms. By observing the current mixed ecology of government information practices and building on the conceptual frame of the document, we illuminate the continuities between paper-based and digital information control. Our third argument is that, though networked authoritarianism is not seamless, it is still effective at chilling speech and cutting off a public space of discursive dialogue, because of the ways that information control has long been associated with violence. Villagers live with the sense, based on historical experience, that this proximal information control and the networked authoritarianism it gives rise to can turn violent at any time.

Together, these findings may help CSCW scholars, activists, and Internet users understand both the risks and realities of networked authoritarianism, and the irreducible forms of humanity and entanglement at its heart. We have shown how the imperfect use of a simple social media form triggers trauma and effectively takes away an important channel for oppositional speech. The effectiveness of information control tactics are often much less about successfully deploying the newest or shiniest kind of technology, and instead about building on a history of violence and fear. By disaggregating the affordances of emerging technology from the fear tactics and effectiveness of control, we have better insight into how technology "works" at chilling speech and action.

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