“Surveillance with Chinese Characteristics”: The Development & Global Export of Chinese Policing Technology

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Media and policy discussions of late have been chock-full of discussions about the use of Chinese surveillance and policing technology for social control. Reports by policy analysts warn of the dangers of high-tech surveillance and artificial-intelligence (AI)-based approaches to policing in autocrats’ hands, and journalists document the rise of a “dystopian surveillance state” inside China – especially in the far western region of Xinjiang, where Turkic Muslim minorities, particularly Uyghurs, have been subject to mass detention and involuntary ideological re-education in the name of counterterrorism. Globally, China’s export of these surveillance and policing technologies has also received increasing media and policy scrutiny. News organizations have provided detailed accounts of the spread and use of surveillance technology from China to places like Venezuela, Ecuador, Zimbabwe, and Uganda, and Huawei, the largest supplier of these kinds of platforms, is at the center of debate over U.S.-China trade and technological competition. At a U.S. House of Representatives hearing in May 2019 on “China’s Digital Authoritarianism,” both the chairman and the ranking member warned that the export of these technologies would give “countries the technological tools they need to emulate Beijing’s model of social and political control.”

This project – which is still in early stages – examines the domestic development and global export of Chinese surveillance and policing technologies. Domestically, it situates its findings in the rapidly-evolving literature on information and authoritarian control, building on recent work that shows that authoritarian regimes use information to make repression more precise and selective, and that this repression is often preventive rather than reactive. Here, the project’s main contribution is to specify theoretically why information is useful for preventive repression: it enables autocrats to identify not just the overall distribution of concealed preferences among citizens, but to match

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2 Fontaine and Frederick 2019.
3 Lucas and Feng 2018; Mozur 2018; Buckley et al 2019; Chin and Burge 2017; Wang 2019.
4 Joplin 2018; Shahbaz 2018; Cave et al 2019; Daw 2019; Feldstein 2019b; Parkinson et al 2019.
5 “U.S. Unlikely to Extend Waiver for U.S. Firms to Supply China’s Huawei,” Reuters, 26 September 2019.
7 Pierskalla 2010; Nordas and Danveport 2013; Danneman and Ritter 2014; Sullivan 2015; Ritter and Conrad 2016; Greitens 2016; Blaydes 2017; Truex 2018; Dragu and Przeworski 2018; DeJaegher and Hoyer 2018.
citizens to specific points on that distribution. Information also facilitates strategy selection: it informs autocrats of the level but also the type of grievance, which allows regime agents to engage in differentiated demobilization: a process of selecting and applying strategies that will convince potential dissenters to stand down at the lowest possible risk to the regime. In many cases, what information facilitates is not repression but coercion: the threat rather than the outright use of punishment; it is an important factor shaping the extent to which an authoritarian regime mixes the approaches of concession, coercion, and physical punishment, and is especially helpful for understanding how authoritarian regimes think about the legibility of populations under conditions of relative ethnic homogeneity.

Moreover, the rise of China’s surveillance state has had international as well as domestic consequences. Evidence from a new dataset, discussed in the final section below, suggests that policymakers have significantly understated the number of countries in which Chinese surveillance and policing technologies are used, as well as the speed with which the use of this technology has spread. It is now in use in at least 80 countries, both democratic and autocratic, on every continent except Australia. China, therefore, can be thought of as the ‘primary’ or ‘index case’ from which a new set of informational and technological conditions has spread across the world, impacting political life in a wide range of political systems and geographic contexts.\(^8\)

This paper proceeds in five main sections. In the first, I sketch a nascent theory of authoritarian surveillance, identifying what problems surveillance can solve and how information can be (but is not always) translated into differentiated demobilization that limits physical repression, atomizes citizens, and avoid the potential for collective backlash. The second section outlines the context in which China developed its surveillance and social control systems, drawing on new sources to explain how the CCP sought to solve information problems at both the national and the local level. The third section provides qualitative evidence of the theorized mechanisms, showing

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\(^8\) In epidemiology, the “primary case” is the first case that introduces a condition to a population, while the “index case” is the first documented case; a case may be both primary and index. In political science, Finkel (2015) refers to the Holocaust as an index case for the study of genocide and repression; see also King 2012.
that local leaders in China explicitly seek information for the purposes of preventive repression and use it to engage in differentiated demobilization. The fourth section turns to international effects, documenting the spread of Chinese surveillance and policing technology and discussing potential drivers of this diffusion. The fifth section concludes by reflecting on the project’s theoretical and policy implications, and by highlighting necessary directions for future research.

From Information to Demobilization: Sketching a Theory of Authoritarian Surveillance

Recent scholarship has emphasized that information is a key component of coercive capacity under authoritarianism. Although popular mobilization is not the only way that autocrats lose power, protest and contentious collective action occur frequently under authoritarian rule, and can spark authoritarian breakdown and democratization, or even revolution. In China, protests are a common feature of political life; though the majority are not regime-threatening, scholars agree that the Chinese political system takes them seriously and has put immense effort into developing flexible tactics and strategies to channel, contain, and when necessary suppress, organized contention and collective action. This section theorizes the role that surveillance plays in China’s efforts to demobilize collective action from within the population, with the hope of explaining why

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9 In the pages that follow, therefore, coercive capacity specifically refers to the ability to deal with the threat of collective action or of mobilization (the latter of which is typically understood as a sustained and organized form of collective action that poses a more serious challenge to authorities or regime elites than individual episodes of collective action). Tarrow 1996; McAdam, Tarrow, and Tilly 2003; Tilly and Wood 2015.

10 Svolik 2012 finds that coup or insider removal is the most common way for autocrats to lose power.

11 Friedrich and Brzezinski 1965; Arendt 1973; Tilly 1978; Marwell and Oliver 1993; Bratton and Van de Walle 1997; Geddes 1999; Bunce 2003; Boix 2003; McAdam, Tarrow, and Tilly 2003; Acemoglu and Robinson 2001, 2006; Ulfelder 2005; Beissinger 2007; Bueno de Mesquita and Smith 2009, 2010; Chenoweth and Stephan 2011; Fu 2017; Geddes, Wright, and Frantz 2018.

the Chinese Communist Party (CCP) has invested so much – financially, organizationally, politically – into the informational components of its “social governance” regime.

The role of information in policing differs in autocracies versus in democratic political systems. In either system, effective policing relies on information that comes from the citizenry, but the relationship between information and political authority diverges. Under democracy, where citizens are principals directing police agents, coercive agents take action if it is generated by and guided by citizens. Police begin investigations based on citizen complaints (information), and, in combination with other actors in a criminal justice system, use additional information from citizens (provided in their roles as victims, witnesses, and sometimes suspects) to investigate, make arrests, and prosecute crimes. Democratic citizens, therefore, are simultaneously principals in control of the police and subjects who are vulnerable to the authority they have granted police, a duality that constrains the power of coercive agents.

Under autocracy, where the regime is the principal directing a coercive agent, and citizens are primarily subject to police power, the dynamics of information provision change. Regime rather than citizen demand initiates police action, and that action is directed against citizens who do not have a dual role as principals. In this context, information must be obtained from citizens whether or not it will benefit or protect them, and sometimes when it will harm them to advance the interests of the regime. Citizens therefore do not always provide information voluntarily, especially types of information that may trigger the use of coercive agents against them. Moreover, if citizens believe that there are divergent interests within the regime (or between the regime and agents), they may

13 The following paragraph is, of course, an oversimplification of the principles of democratic policing. The model I describe in this paragraph should be thought of as an ideal type rather than an empirical reality.

offer more/less information, or different information, to different parts of the state (or party-state) apparatus.\footnote{As Dragu and Przeworski (2018) emphasize, among others, regime leaders and coercive agents may have divergent interests.}

The current consensus in comparative politics is that non-democracies face significant information problems. Ordinary citizens falsify preferences to avoid being targets of state coercion, and rumors proliferate in the absence of trust in official statements.\footnote{Kuran 1995; Chen and Xu 2017; Huang 2017; Wintrobe 1998; Charron and Lapuente 2011; Egorov, Guriev, and Sonin 2009.} Ethnically exclusive regimes may have difficulty obtaining information from areas dominated by outside ethnic groups, as happened both in Uganda and in Iraq under Saddam Hussein.\footnote{Lewis 2017; Lewis and Larson 2018; Blaydes 2018.} Free media, which can be a source of reliable and useful information for ruling elites, is often deemed too risky for autocrats to allow, because it can generate shared knowledge of regime failures, facilitate anti-regime coordination, and catalyze external support for opposition.\footnote{Tilly 1978; Persson and Tabellini 2006; Egorov, Guriev, and Sonin 2009; Chwe 2013.} In China, despite some commercialization of media and some investigative or narrative journalism, media outlets remain under relatively tight CCP control.\footnote{Lorentzen 2013; Stockmann 2013; Repnikova 2017; Jaros and Pan 2017; Qin, Stromberg, and Wu 2016.}

Misrepresentation and information problems occur regularly within authoritarian regimes as well. Subordinates (including those closest to the autocrat) have incentives to misrepresent information on citizen dissatisfaction, especially if doing so will have negative career consequences.\footnote{Kapuscinski 1983; Rosen 2006; Woods et al 2006; Gao 2016; Pan and Chen 2018; Dragu and Przeworski 2018.} Leaders who fear their own security forces may pursue coup-proofing strategies that handicap those organizations’ ability to gather accurate intelligence on popular opposition, or to convey it to the actors who can do something about those threats.\footnote{Greitens 2016; Talmadge 2015.} Thus regimes often face difficulty collecting accurate information, and even if they do, may have organizational handicaps that prevent that
information from travelling across the bureaucracy to inform action. This generates variation in the ability to use preventive coercion: regimes that resolve more of these informational problems will have a comparative advantage in identifying potential instability in time to address it effectively, relative to those where information problems are frequent and endemic.

Faced with the constraint of limited information provision from citizens – which varies across different temporal, national, and subnational contexts – autocracies have several options. They can forego information (potentially costly to both agents and their principals); they can forcibly extract information (which is costlier for agents and risks inaccuracy for principals); or they can persuade citizens to supply information voluntarily (possible, though difficult). Alternatively, coercive agents can attempt to obtain information from sources that can be collected without human interaction and that human providers cannot falsify. The appeal of technologically-based surveillance mechanisms is therefore partly in the fact that they do not require direct human interaction – but as yet, we know relatively little about how effective these sources can be in meeting regime informational needs absent context provided from human sources.

In what contexts, and for what exact reasons, do authoritarian coercive institutions seek information on citizens? To begin, consider the process by which public collective action materializes from individual dissent, represented in Figure 1, below:

**Figure 1: From Private Individual Dissent to Public Collective Action**

Individuals within a society under authoritarian rule have a range of opinions and preferences. People’s true opinions, however, especially of the regime, are often private and concealed,
phenomenon that Kuran calls “preference falsification.”22 If their preferences include some level of dissent, they may engage in small-scale contention that remains individualized and private, whether these are everyday acts of resistance that James Scott terms the “weapons of the weak,”23 or oppositional rhetoric, humor, and cultural behavior that fall short of collective action.24 Individual participants are drawn into collective action, therefore, by “mobilizing structures” – organizations, networks, or associations that have the ability to gather and organize the people, resources, and strategy necessary to turn a group into a movement or sustained challenge.25 These aggregating structures may recruit participants, communicate knowledge to create shared understanding, shape group identity around movement goals and objectives, teach tactics or some combination of all of these functions. Mobilizing structures can be formal organizations, but in authoritarian political settings, they are often informal networks – both in China26 and in other comparative contexts.27

If individual dissent is private and concealed, and collective action is public and visible, the aggregation process that occurs via mobilizing structures lies somewhere between the two. The fact that aggregating processes are collective means that they are not wholly private, but they are also not formally visible, especially to the authorities, in the way that collective action must be to make claims and achieve goals. This stage is also socially collective, in that people are communicating and forming a shared identity and structure, but not necessarily physically collective in the way that a protest or other contentious action (often) involves participants gathering in the same location. This semi-private aggregation stage can result either in public collective action, or in “disguised collective

25 Zald and McCarthy 1987; Snow and Benford 1988; McAdam et al 2001; Tarrow 2011; Tilly and Tarrow 2015.
27 Denouex 1993; DellaPorta 1995; Wiktorowicz 2003; Singerman 2004; Beinin and Vairel 2011; Bayat 2013; Fu 2018.
“Public Collective Action” that has been organized collectively, but is carried out individually (in public) to increase chances of success while lowering the risks of state repression.28

Responsive repression and preventive repression target different parts of the process shown in Figure 1. The types of repressive activities that the field has (until recently) focused on, especially those measured by military spending or personnel, are violent crackdowns on citizens who have physically assembled for public collective claims-making, and is therefore reactive to contentious action. Preventive repression, by contrast, targets the earlier stages of the process, when activity is still private or semi-private.29 Figure 2 depicts this difference.

Figure 2: Preventive vs. Responsive Repression

The key difference between responsive and preventive repression is in the stage of mobilization that they target, and the nature of the activities that take place during that part of the mobilization process. If preventive repression seeks to stop individuals from proceeding to public collective action, it must by definition intervene while beliefs and behavior are still private or semi-private.

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29 Of course, the deterrent component to military manpower and deployments is partially preventive.
That earlier intervention places much higher informational requirements on the coercive apparatus of an authoritarian regime to solve the problem of citizens’ preference falsification.\(^{30}\) Protests reveal information;\(^{31}\) once citizens are shouting and waving placards in front of the presidential palace, the capacity for violence required to remove them may be relatively high, but the informational requirements are relatively low. The answer to the question asked by coercive agents “who should we worry about?” is straightforward: “the people right in front of you.” By contrast, identifying targets when behavior is still private and atomized requires more information, and that information is harder to gather. Moreover, if citizens strategically mislead coercive agents – or offer conflicting or divergent information to different parts of the coercive bureaucracy – then integration and cross-checking of information becomes especially important to ensure accuracy. In sum, information is more important to preventive repression than to reactive repression.\(^{32}\)

Showing that information is important, however, is not a complete theory. How exactly do authoritarian regimes use information to prevent unrest and maintain stability? I argue that having good information is key to effective coercive capacity because it assists authoritarian regimes with two key tasks. First, information helps officials identify potential threats and assess their severity. This means that information must be accurate; inaccurate information leads either to false positives that create a backlash or false negatives that can jeopardize the security of a regime. Because one piece of information on its own is seldom enough to conduct a threat assessment, any given data point must also be obtained early enough to be put together and integrated with other information that makes it possible for intelligence and coercive agents to make judgments on threat type and severity.

\(^{30}\) Preference falsification also places informational constraints on citizens seeking to coordinate in authoritarian environments, as has been noted by Kuran 1989; Little 2015; Tyson and Smith 2018 (among others).

\(^{31}\) Lohmann 1993, 1994; Bueno de Mesquita 2010; Meirowitz and Tucker 2013; Casper and Tyson 2014.

\(^{32}\) There are also significant implications here for studies of coercion and authoritarian survival. As this figure illustrates, regimes select themselves into responsive repression through a failure in earlier demobilization or deterrence processes. Any study of how observed repression affects authoritarian survival must account for this selection effect. See Ritter and Conrad 2016; Greitens 2016.
Note that to engage in preventive repression, authoritarian coercive agents must solve specific informational problems related to citizen preference falsification that go well beyond simply discerning the overall “underlying distribution of preferences,” which is the aspect of the problem most discussed by Kuran and others. Citizens are not homogenous or interchangeable; they exhibit both a) a range of grievances with the regime, and b) varied thresholds for anti-regime mobilization. A secret police organization must possess not just an understanding of how much opposition is out there, but “the ability to identify enemies correctly.” Failure to do this risks both Type I and Type II errors: repressing citizens who are not at risk of mobilizing in opposition, and prompting a backlash; or failing to repress citizens who are planning to mobilize against the regime, and therefore allowing private dissent to turn into collective action. For a security service, knowing what the overall distribution of preferences is will not be sufficient; they must also know who falls where on the particular distribution, and must find this out at a time when they can still do something about it. Thus, precise threat identification and assessment is the first contribution that information makes to coercive capacity.

The second task that information facilitates, after threat identification and assessment, is strategy selection: choosing how the coercive apparatus should deal with the threat it has identified. Because individuals living under authoritarian rule are not homogenous, identifying the potentially threatening individuals earlier on provides the regime with more time and potential options for demobilization. However, individualized information on a citizen’s preferences, grievances, and

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33 Kuran 1991; Siegel 2011.
34 Gregory 2009; Gregory et al 2011.
35 On the risks of excessive violence producing backlash, see Condra and Shapiro 2012; Felter and Shapiro 2017; Francisco 2005; Downes 2007; Kalyvas 2006; Kocher, Pepinsky, and Kalyvas 2011. A subset of these studies argues that collective or indiscriminate repression can be effective under specific conditions; see, for example, Downes 2007; Lyall 2009; Daxecker and Hess 2013.
36 There is an extensive security studies literature on strategy selection in different contexts, from classic works on military proclivity for offensive strategy in conventional conflicts (Posen 1984; Snyder 1984; Van Evera 1984; Avant 1993; Rosen 1991) to nuclear strategy (Narang 2014) to counterinsurgency (see footnote 34 above).
thresholds must not only be acquired early enough to conduct a full threat assessment; it must be acquired, integrated, and analyzed early enough that officials can then share it with the agents who actually decide on and implement demobilization strategies. In short, to be useful for preventive and differentiated demobilization, information must be accurate; obtained early, and distributed to the right place in the coercive apparatus. This means that authoritarian regimes need an institutional framework capable of collecting and integrating accurate information, deciding what to do with it, and distributing it to the right actors in time for preventive action. This also reinforces the idea that spending alone, though a common metric for coercive capacity, is insufficient: high levels of spending on internal security are likely to be ineffective unless they are applied within the right institutional framework.\(^{37}\)

What kinds of strategies can authoritarian coercive agents employ if they identify a citizen as a potential threat to the regime? I propose that authoritarian regimes apply one or more of three primary demobilizational strategies: *concessions, coercion,* or *pre-emption.* Each of these strategies has been documented in the general literature on comparative authoritarianism, but also appears specifically in scholarship on Chinese politics. I argue that information, in essence, places individuals at specific points on a distribution that tells the party-state and coercive apparatus what strategy to apply to maximize the likelihood of successful demobilization – it is one of the key variables that helps shape the balance between co-optation and repression in non-democracies.

First, authoritarian regimes can provide *concessions* to assuage dissent and limit contention.\(^{38}\) Some concessions reward loyalists,\(^{39}\) while others are aimed at co-opting opposition or converting

\(^{37}\) On how this applies to the China case prior to Xi Jinping’s ascent to power, see Greitens 2017.

\(^{38}\) Tullock 1987; Wintrobe 1998; Gandhi and Przeworski 2006; Haber 2007; Gallagher and Hanson 2009; Mares and Carnes 2009; Cammett and Issar 2010; Distelhorst and Hou 2017.

\(^{39}\) Slater 2003; Chang and Tsai 1985; Kwon 2003; Geddes 2006; Magaloni, Diaz Cayeros, and Estevez 2007; Blaydes 2011.
wavering/neutral citizens to supporters. These concessions can be policy concessions or material ones, and the latter can be in the form of patronage, or targeted public goods and social welfare provision (a form of redistributive politics). Bueno de Mesquita and Smith suggest that provision of material benefits will improve citizens’ welfare and “diminish their desire for revolutionary change”; in East Germany, for example, social unrest in 1953 produced redistributive responses on the part of the GDR authorities. Similarly, in China, one study found that around 30% of large-scale mass incidents in China resulted in the government providing some form of monetary compensation to protestors. While post-unrest compensation is a responsive form of concession, policy and material concessions can also be deployed preventively, to demobilize citizens in anticipation of a protest or petition that then does not materialize. The GDR appeared to think of redistribution this way in maintaining its program after the 1953 unrest had subsided, and the contentious politics literature on China has documented cases where local officials simply pay citizens not to protest: a direct exchange of material benefit for political demobilization.

Second, information can enable coercion. Following standard usage in international relations, I define coercion as a strategy that emphasizes the threat of punishment or violence, rather than its actual use, to deter actors from mobilization or compel them to desist from it. These threats may be communicated privately, so they are difficult to observe; they can either arrest mobilization in the early stages of the process depicted in Figures 1-2, or over time, deter it entirely—leading to what Judt referred to in post-1945 Eastern Europe as the “peace of the prison-yard.” In China, survey

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41 Bueno de Mesquita and Smith 2010; Roessler 2011; Reuter and Robertson 2015.
42 Thomson 2017.
43 Lee and Zhang 2013.
44 Ibid; see also Cai 2010; X. Chen 2012; Lee and Shen 2014; Shadmehr 2014.
45 For a classic definition of coercion, see Schelling 1960; see also George 1991; Byman and Waxman 2002.
and ethnographic research has found evidence of coercive approaches in the phenomenon of “relational repression” – where a colleague, friend, or family member is intimidated or threatened in order to convince an individual to refrain from or stop challenging the party-state. As applied to contentious politics, coercion can be used for either compellent purposes (to make an individual stop contentious actions that they would otherwise continue to engage in, or convince them to actively cooperate with the coercive apparatus) or deterrent purposes (to prevent them from engaging in contentious or threatening action to begin with). Either way, the distinguishing feature of coercion is the use of threats, rather than violent behavior by the state, to change individual calculations and produce citizen compliance.

Finally, the coercive apparatus can use intelligence to target citizens for pre-emptive use of force. Pre-emption is the actual use of physical punishment; it is an example of high-intensity repression (though that term sometimes conflates the scope of repression with its intensity). Studies of dissident repression in China have found clear evidence of the use pre-emption. In preparation for sensitive anniversaries that could provide potential focal point for collective action, for example, authorities proactively place protestors and petitioners under detention or house arrest. Here, in particular, is where regimes face the problem of avoiding group-level punishment that can reinforce communal identity and foster collective resistance. Accurate intelligence in the hands of the right coercive agents helps to mitigate this risk by enabling “precise, selective, lower-intensity violence, against the right people and only when necessary.”

This assists the coercive apparatus in two distinct ways: first, it lowers the number of people who have been repressed, thereby diminishing the probability that members of this group will find common ground and a shared basis for future action. Second, selective pre-emption can also be conducted more privately, making violence less

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48 Truex 2018; Liao and Tsai 2018; Carter and Carter n.d.
49 Blaydes 2018.
visible and reducing the risk of backlash in that way sparked by media coverage or exposure to an increasingly pro-democratic international environment.\footnote{Overall, studies of global political violence suggest that mass killing and state violence against civilians are both on the decline in the post-Cold-War period, perhaps due to increasing awareness of the costs of visible violent repression. Ulfelder and Valentino 2008; Guriev and Triesman 2015; Levitsky and Way 2010; Conrad and Ritter 2019.}

One of the primary benefits of information, therefore, is that it generates capacity for \textit{differentiated} demobilization – the calibration of demobilizational strategies on an individual basis to fit a particular citizen’s grievances and assessed threshold for action.\footnote{Roberts (2018) notes similar dynamics: porous censorship creates informational barriers between educated, affluent citizens (more likely to circumvent censorship), and average citizens (less likely).} Differentiation enables a targeted approach that divides citizens based on whether or not their grievances are solvable (governance/material concessions) and what their threshold is for mobilization (if low, they can be coerced; if too high, they must simply be pre-empted).\footnote{These judgments are temporally specific; it may be possible to approach a citizen who requires pre-emption in the short-term with other strategies in the long-term.} A targeted approach also makes coercive threats, specifically, more credible – because threats issued to a specific individual demonstrate, at the time the threat is made, the regime’s capacity to identify/detect and punish dissenters. And because differentiated repression can be conducted privately, it lowers the potential for costly backlash by disaggregating and atomizing citizens’ experiences of repression, rather than allowing collective experience of it to solidify out-group identity and harden resistance.\footnote{Friedrich and Brzezinski 1965; Dallin et al 1970; Wintrobe 2000; Francisco 2005; Siegel 2011; Blaydes 2018.} How a regime obtains, organizes, and uses information on citizens, therefore, is a foundational attribute of authoritarian control because information helps first to identify threats, and second to match them to disaggregated de-mobilization strategies targeted to achieve the highest chances of success at the lowest possible political cost.

Two words of methodological and theoretical caution emerge from this framework. Because authoritarian regimes have a desire to deter individuals from mobilizing, they have incentives to
exaggerate the effectiveness of the surveillance and control capabilities that they possess. Some of the stories and glossy promotional videos on the efficacy of these systems should be interpreted as exercises in domestic propaganda, aimed at convincing the population that political misbehavior will be swiftly identified and caught by the authorities.\textsuperscript{55} Less likely to be emphasized in a regime’s public rhetoric are failures of experimentation, bureaucratic and personnel hurdles, and gaps in the regime’s ability to watch and coerce citizens.\textsuperscript{56} In general, then, scholars should use caution in assessing the nature, source, and audience of regime statements, to check for the possibility that portrayals of surveillance efficacy are intentionally upwardly biased by authorities to deter citizen mobilization. Internal assessments and perceptions, though more difficult to access, are likely to provide a better (though still imperfect) basis for judging efficacy.

This is especially applicable in China, where the idea of “striking hard” to intimidate and deter criminals is deeply embedded in public security thinking, and where deterrent idioms like “kill the chicken to scare the monkey” (shajijinghou, 杀鸡儆猴) or “kill one to warn a hundred” (杀一儆百, shayijingbai) are frequently quoted by police officials.\textsuperscript{57} Given the clear desire for deterrent effects on the part of the Chinese coercive apparatus, rhetoric about the awe-inducing power of technology to regulate citizen behavior and deter unwanted mobilization should be regarded with skepticism. The pages that follow, therefore, treat surveillance capability as a policy objective and a hypothesis to be tested, rather than a reality to be assumed.

The second cautionary point is that surveillance technologies can be used this way, but do not have to be. If a regime chooses to use ascriptive or group-based characteristics to assign citizens to
demobilization “treatments,” then fancy technology and a high volume of information will not produce differentiated demobilization: the likely result is still collective repression, with all the potential costs that accompany it. As I explore in a separate paper, this appears to be what has occurred in Xinjiang, where in early 2017, the CCP shifted towards a strategy of collective repression that relied on the mass detention and wide-scale re-education of Turkic Muslim minorities, on the basis of a new judgment that their ethno-religious belief and identity itself posed a heightened counterterrorism threat to regime security.\textsuperscript{58}

**Solving Information Problems: China’s Evolving Approach to Surveillance**

Xi Jinping has made redefining the philosophy and management of domestic security a hallmark of his tenure, a re-direction that was signaled early by his speeches about the importance of “comprehensive” or “holistic” national security.\textsuperscript{59} In doing so, he has emphasized “prevention and control” (防控, fangkong) rather than the regime’s previous catchphrase, “stability maintenance,” and has emphasized the use of technology to collect information on citizens for preventive public security purposes.\textsuperscript{60} This section traces the development of China’s surveillance state by describing the coercive bureaucracy’s persistent information problems, and summarizing recent changes to national doctrine that have attempted to address these challenges. It then outlines the key role of local actors in implementing national directives, and explains two specific problems, information blindness and information islands, that characterize information politics at the local level.

\textsuperscript{58} Greitens et al forthcoming (Winter 2019/20). Paper available upon request.


\textsuperscript{60} Hu 2015; for a summary of Xi’s changes to domestic security, see Greitens 2019.
A non-democratic coercive apparatus is likely to find information-based, differentiated and preventive repression especially desirable if it perceives visible mass repression as costly. Since the mid-2000s, China’s public security forces have operated in such an environment: they are responsible for maintaining stability, but told to achieve that goal with very limited use of force, and in many cases, are told they will be disciplined for using force unnecessarily. Local cadres also have career incentives that prompt them to focus on prevention of social conflict, which means that they are (relatively) aligned on this score with local coercive agents. Collective action is considered disruptive and costly to address ex post — but more practically for local party officials, simply having a “mass incident” can be a negative/veto performance indicator for promotion (even if handled successfully). Both public security doctrine and officials’ career incentives, therefore, incline toward limiting the use of local state violence against citizens.

Contemporary Chinese public security analysis emphasizes the importance of both information quality and information timing in order to engage in effective prevention of social conflict. Articles in public security journals highlight the importance of “foreknowledge” (xianzhi, 預知) and timeliness (jishi, 及時) in public security intelligence, arguing that timing and purpose separate intelligence from simple information. According to these studies, timing matters because defusing a protest competently is not bad, but it is infinitely preferable if local officials can prevent the protest

62 Whiting 2004; O’Brien and Li 2006; Cai 2008; Li et al 2012; Chen 2012.
63 A number of China scholars argue that this pressure has incentivized local authorities towards the use of informal coercion and third-party suppression using actors such aschengguan (城管) — and that this, in turn, has undermined the local state’s monopoly on violence and often visibly backfired by producing protest about the misbehavior and bullying of informal coercive actors. This may be one reason why CCP officials have emphasized intelligence: it provides an alternative to the use of informal actors whose behavior has become costly. Chen 2017; Ong 2018a, 2018b.
64 For a good English-language summary of some of these studies, see Schwarck 2018.
from coalescing in the first place—especially from the perspective of the local officials themselves, since their prospects for promotion can be derailed by one major incident. To use a public safety analogy invoked by Chinese officials, social management must be focused not just on effective firefighting, but on fire *prevention*. In 2006, security chief Zhou Yongkang called for new mechanisms of public opinion collection to provide “early warning” on potential threats to social stability;\(^{65}\) in 2009, Minister of Public Security Meng Jianzhu instructed local leaders to seek accurate, actionable information to forecast (*yuzhi*, 预知), forewarn (*yujing*, 预警), and prevent (*yufang*, 预防) threats to political security and social stability;\(^ {66}\) and throughout the 2000s, the Ministry of Public Security worked to develop public security intelligence systems (*gong'an qingbao tixi*, 公安情报体系) focused on “intelligence-led policing” (*qingbao zhidao jingwu*, 情报指导警务).\(^{67}\)

The objective of obtaining complete, accurate, and timely information for preventive purposes, however, faces significant obstacles that stem from the organizational makeup of the Chinese political system. Contemporary scholarship on China has highlighted the role of information in Chinese governance, contributing to and extending the findings from comparative politics described above; on balance, its findings reinforce the view that obtaining accurate information is a perennial problem for autocratic leaders. Accurate information on citizen preferences and opinions is difficult for Chinese officials to obtain in the absence of traditional democratic mechanisms such as free media, civil society, and electoral competition.\(^{68}\) Monitoring government performance is also difficult; lower-level officials distort upward reporting of data from economic statistics to online grievances and protest incidents, for reasons of both self-protection and self-advancement,\(^ {69}\) and fragmentation of social control efforts across “different agencies within

\(^{65}\) Zhou 2006; Schwarck 2018, pp. 8-9.

\(^{66}\) Meng 2009.

\(^{67}\) Schwarck 2018. See also CCP Central Committee 2004.

\(^{68}\) Liebman 2005; Lorentzen 2014, 2015; Stockmann 2012; Chen and Xu 2017; Roberts 2018.

\(^{69}\) Shirk 2011; Wallace 2014; Pan and Chen 2018.
a single local state” makes it difficult for the local party-state to gather the information necessary to supervise civil society.\textsuperscript{70}

To address its informational challenges, China’s party-state relies on various indirect mechanisms—national/local people’s congresses and consultative bodies; petitions, protests, and ‘porous censorship’ of social media platforms; and government agencies like petition offices and “mayor’s mailboxes”—to provide information on citizen preferences/grievances and government performance.\textsuperscript{71} China’s “fragmented authoritarian” system, however, appears to have significantly limited the extent to which this indirectly-collected information can actually be leveraged for stability maintenance and social governance.\textsuperscript{72} In particular, the structure of overlapping vertical departments (\textit{tiao}, 条) and horizontal local authorities (\textit{kuai}, 块) exacerbates challenges in local information-sharing and preventive coercion: \textit{kuai} are responsible for stability maintenance, but coercive power – and the information needed to execute effective stability maintenance operations – is actually controlled and operated vertically within departments/bureaus (\textit{tiao}). Moreover, even single ministries (such as MPS) lack institutionalized horizontal mechanisms for information-sharing across their various departments.\textsuperscript{73} Indirect information mechanisms are of little help in solving this fundamental organizational mismatch and achieving the process, outlined above, that is necessary for preventive repression to work.

Under Xi Jinping, the Hu-Wen emphasis on “stability maintenance” has been replaced by the byword “prevention and control” (\textit{fangkong}, 防控). In 2015, for example, Zhou’s successor Meng

\textsuperscript{70} Fu 2017, 2018: 50-65; Deng and O’Brien 2013; Lee and Zhang 2013; Ong 2018a, 2018b; Chen 2017; Scoggins and O’Brien 2016.

\textsuperscript{71} Manion 2015; Truex 2016; Yan 2011; Lorentzen 2013, 2014; Dimitrov 2014, 2015; Chen and Xu 2017; King et al. 2013; Chen, Pan, and Xu 2016; Distelhorst and Hou 2017; Mattingly 2019.

\textsuperscript{72} Effective cooperation among China’s numerous stability maintenance organizations has long been a thorny problem. Lack of coordination across actors within a locality, among localities on an issue, or between central leaders and local agents commonly disrupts both policy implementation and Chinese leaders’ ability to receive accurate, timely information. Lampton 2015: 764; Guo 2012: 2-3; Fu 2017; Lieberthal and Lampton 1992.

\textsuperscript{73} Wang 2010; Schwarck 2018:7-8; Wuthnow 2017:895.
Jianzhu emphasized *fangkong* as the “correct direction” for political-legal work in a six-point address that invoked the term “foresight” (不断增强工作预见性).\(^{74}\) In early 2019, at the national meeting of Public Security Bureau directors, Minister of Public Security Zhao Kezhi urged his audience to “Always insist on putting *prevention* of political risks as the first priority.”\(^{75}\) The use of information technology in this effort is paramount: in mid-April 2015, the CCP Central Committee and PRC State Council called for the creation of a “three-dimensional information-based prevention and control system for public-social security” (创新立体化信息化社会治安防控体系) – another term that appears repeatedly in CCP directives on “social governance” (社会治理, *shehui zhili*) – in order to “comprehensively promote the construction of a peaceful China.”\(^{76}\) The directive calls for the expansion of networked video surveillance and grid management, enhancement of predictive and early warning capabilities in public security, and reorganization of local party and government work in this area to limit information gaps and achieve smoother coordination of information and public security intelligence.\(^{77}\) The CCP has also explored a number of ways to more directly connect information-gathering with the infrastructure and management of public security at the ground level, including major organizational and legal reforms to China’s political-legal apparatus (*zhengfa xitong*, 政法系统).\(^{78}\)

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\(^{74}\) Meng 2015; see also Trevaskes 2013, pp. 51-77.

\(^{75}\) Emphasis added. His statement was “始终坚持把防范政治风险置于首位.” Li 2019.

\(^{76}\) CCP Central Committee/PRC State Council 2015.

\(^{77}\) This emphasis on informatization and technology also parallels a developing emphasis on networked intelligence and decision-making in China’s military strategy.

\(^{78}\) For more detail on these reforms, see Greitens 2019.
Understanding Local Information Problems

When Chinese leaders emphasize the importance of preventive capacity in social governance, they consistently place primary responsibility on local communities and local leaders. The limited amount of analysis that exists thus far, however, has focused on the CCP’s domestic security efforts at the central/national level (which are still only incompletely understood) – and it is even less clear how the initiatives that have been announced are playing out at the local level, where policies are implemented, politicians’ careers are made or broken, and where – both in China and more broadly in authoritarian political systems -- central and local coercive actors are not always in perfect alignment.79

One of the most salient examples of this local emphasis is Xi Jinping’s repurposing of the Mao-era “Fengqiao Experience” (Fengqiao jingyan 枫桥经验) as a model of the regime’s philosophy of prevention and control.80 Fengqiao, in Zhejiang province, became a model for removing “reactionary elements” during the 1963 Four Cleanups Movement, and continued to be a post-Mao benchmark for grassroots-level social control and “embodiment of the party’s mass line.” In October 2013, Xi Jinping invoked the Fengqiao experience, bringing it back to the fore and defining it as an approach in which the masses “resolve social conflicts or contradictions on the spot.” By doing this, they do not transfer them to higher authorities (“small things don’t leave the village, big things don’t leave the town, contradictions don’t escalate to higher authorities”81), which Xi depicted

79 On China, see Murray and Tanner 2007; Fu 2018. Generally, see Levitsky and Way 2010: 59-60; Earl and Soule 2006; Dragu and Przeworski 2018.


Another example that had been highlighted by the Chinese leadership was that of Wukan, which became prominent after provincial authorities, including then-leader of Guangdong Wang Yang, successfully defused protests through dialogue and compensation. In 2013, Trevaskes called it “China’s most influential mass incident in years,” and noted that after the fall of Bo Xilai, Zhou Yongkang had proclaimed the “Guangdong model” as the new approach for China. The re-emergence of protest in Wukan several years later, however, appears to have damaged the credibility of this approach, and today the Fengqiao experience is a more prominent model than Wukan. See Trevakses 2013, p. 71; Zhao 2012.

81 “小事不出村、大事不出镇、矛盾不上交.”
as a means of preventing the vertical escalation and geographic spread of contention. He revisited Fengqiao in January 2019 remarks at the Central Party School, calling on cadres to “modernize social governance, adhere to and develop the “Fengqiao experience,” improve social coordination mechanisms to construct safety, and enhance social stability capabilities and levels from the source,” which is a phrase that refers to preventive defusing of social conflict.\footnote{The sentence read: “要推进社会治理现代化，坚持和发展“枫桥经验”，健全平安建设社会协同机制，从源头上提升维护社会稳定能力和水平.” See “习近平：提高防控能力, 坚力防范化解重大风险, 保持经济持续健康发展社会大局稳定 [Xi Jinping: Improve Prevention and Control Capabilities; Try to Prevent and Resolve Major Risks; Maintain Sustainable and Healthy Economic Development and Overall Social Stability],” 21 January 2019, \url{http://www.qstheory.cn/yaowen/2019-01/21/c_1124021825.htm} (hereafter Xi 2019b).} Fengqiao has since been termed a “banner for the country’s political-legal frontline governance” and “the compass and weathervane of grassroots social governance,”\footnote{Emphasis added. “新时代“枫桥经验”是基层社会治理的指南针和风向标.”} and local leaders have explicitly linked it to Xi Jinping’s charge to “comprehensively upgrade the ability to prevent and control social risks.”\footnote{“全面提升社会风险防控化解能力.”} The Fengqiao experience epitomizes the CCP’s emphasis on the importance of local actors in preventive conflict management, as they are the ones whose early actions can avoid escalation and contagion.

Chinese analysis tends to focus on two major problems that occur at the local level: information blindness, and information islands. The former focuses on obtaining/collecting information and making society fully legible to the CCP by reducing “blind spots,” while the latter focuses on information management and coordination within the local party-state bureaucracy.

Reducing information blindness received early attention under Xi Jinping’s leadership. In 2011, Xi warned Central Party School trainees that failing to effectively gather information via the mass line would blind the Party and harm the party’s policy implementation and image; shortly after, the Central Committee and State Council circulated updated guidance on how to use information
for effective social management.\textsuperscript{85} The 18\textsuperscript{th} Party Congress (2012) advocated a governance model focused on understanding the origins of social disputes (\textit{yuantou zhili}, 源头治理), using dynamic management of social conflicts (\textit{dongtai guanli}, 动态管理), and efficient crisis management (\textit{yingji chuzhi}, 应急处置), reinforcing the preventive direction of public security work.\textsuperscript{86} Echoing themes from the Fengqiao experience, the 19\textsuperscript{th} Party Congress (2017) vowed to “improve mechanisms for preventing and defusing social tensions… [and] shift social governance focus to the community level.”\textsuperscript{87} The CCP emphasized the need for local leaders to increase civic involvement in information provision, and required local governments to adopt comprehensive information platforms that would integrate grassroots self-governance into “grid management” (described below).\textsuperscript{88}

Local governments responded by experimenting with ways to involve citizens in new information provision and stability maintenance programs. In Beijing’s Chaoyang District, police recruited \textasciitilde140,000 civilian informants, and built an app that they could use to send in reports; in 2017, these “Chaoyang masses” provided 8,300 pieces of information that police used to solve 370 cases, arrest 250 suspects, and eliminate 390 security threats.\textsuperscript{89} In Shanghai in 2014, then-Party chief Han Zheng, who was subsequently elevated to the Standing Committee of the Politburo in October 2017, designated “grassroots social governance” as the “No. 1 research project.” Following his direction, the municipality produced a grassroots social control policy that emphasized information-based social management; it required streets, townships, residential communities, and villages to establish comprehensive information platforms based on citizen-participation and sought to


\textsuperscript{86} Hu Jintao, 18\textsuperscript{th} Party Congress report, 8 November 2012.

\textsuperscript{87} Xi Jinping, 19\textsuperscript{th} Party Congress report, 18 October 2017.

\textsuperscript{88} CCP Central Committee/PRC State Council 2017.

enhance big data analysis, and dissolve ‘information islands’ (see below). 90 While public narratives of successful flagship cases are useful, they offer relatively little insight into “typical” local experiences, the range of variation therein, and the internal assessments and processes by which local officials attempted to construct the requisite informational capacity.

Moreover, China’s fragmented authoritarian system has posed particularly thorny problems for local officials tasked with maintaining social stability. Under Hu Jintao, fragmentation within the local party-state meant that various actors, all sharing a general mandate to maintain social stability, nevertheless followed distinctive bureaucratic mandates, possessed divergent informational capacities, and employed different tactics to deal with contention—resulting in actions that were sometimes complementary, but sometimes diametrically conflicting. 91 This fragmentation also created “information islands,” in which threats to social stability were more often ignored, distorted, or hidden by local bureaucratic structure than identified and illuminated by it. In 2016, for example, Li Yu wrote that coordination was a major issue for the construction of information-based social governance, and that local bottlenecks – either technical incompatibility or political unwillingness – would have to be resolved in order to achieve effective information-sharing. 92 Again, while Western scholarship has focused on intelligence and organizational reform at the national level, relatively little work examines the local dimensions of information coordination. 93

What all of this suggests, in sum, is that under Xi Jinping, the CCP’s domestic security doctrine has specifically emphasized the objective of “prevention and control.” National guidelines place heavy emphasis on the role of information in making preventive demobilization possible, and direct local actors to intensively implement information-technology platforms to achieve this goal.

90 CCP Shanghai Municipal Committee/Shanghai Municipal Government 2014.
As yet, however, though the information problems faced by the local party-state are fairly well-documented, little is known about how major efforts to address those problems have been implemented by local officials. The following section of the paper provides qualitative evidence of this implementation process, illustrating the theoretical mechanisms described above.

**Building the Surveillance State: Qualitative Evidence from M District**

This section provides qualitative evidence on the development and use of surveillance and social control technology in M District, a relatively typical district in a large city in eastern China. With a population of around two million, M District – like many Chinese cities – experienced rapid urban expansion, contention over house demolition and development, and the influx of a migrant population that comprised almost half the city, and that authorities saw as a significant source of instability and crime. Following a public security assessment in 2009, M District’s officials concluded in 2009 that they needed to change their approach. They emphasized making information on residents more timely, accurate, and integrated, so that it could be used for preventive demobilization. District officials aggressively recruited local informants to avoid information blindness and created new coordination mechanisms/platforms to integrate intelligence and reduce information islands. They then drew on this system to engage in differentiated demobilization of potential contention.

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94 This section draws on research with Huirong Chen; separate paper available upon request. To protect interlocutor identities, the names of the District, city, and specific programs have been omitted, and the text avoids citing news coverage or listing the titles of internal reports in cases where doing so would identify the District. The MU IRB approval number for this project is 2013784.

Prevention Through Information Collection and Coordination

In 2009, following a review by public security officials, M District initiated a “Great Coordination Program” (GCP) aimed at unifying information-gathering, coordinating information among fragmented coercive agencies, and integrating the organizations and individuals involved in stability maintenance. The 2009 assessment of M District’s stability maintenance work emphasized the need to develop information and act early to achieve effective urban management and social stability, making the goal of the program explicitly preventative:

We shall find out and report issues of social management at the first time, advance public service, manage society by providing good service, and turn ex post law enforcement into ex ante public service. Addressing disputes at the grassroots level and in the bud is good for resolving people’s concerns and transforming our urban management from a reactive type into a proactive and adaptive one.96

This focus appeared again in the assessment’s urging to adapt frontline public security work to “move the focus downwards, the front forward, and management to the beginning” (zhongxin xiayi, guankou qianyi, guanli qianzhi, 重心下移，关口前移，管理前置).97 It was also maintained over time; a 2014 review of the program noted growing consensus among local officials that “proactively exploring problems” is better than “reactively waiting for problems,” that “ex ante prevention” is better than “ex post response,” and that “systematic solution” is better than “ad hoc treatment.”98 Officials stated that “timely and sufficient public service can largely prevent emergence of social unrest; social disputes in the bud are much easier to resolve.” 99 In other words, M District’s officials seemed to arrive at a stable consensus that addressing disputes early and preventively was the key to enhancing social stability and resolving public security challenges.

96 M District 2009.
97 M District 2009. Several years later, Minister of Public Security Zhao Kezhi urged PSB directors across the country to “shift their focus/center of gravity downward” (推动重心下移, 警力下沉, 保障下倾); Li 2019.
Among M District’s major areas of focus for constructing preventive coercive capacity was the creation of new mechanisms for timely, efficient information collection and distribution. A GCP official described the importance of information collection and analysis for identifying sources of social unrest as follows:

The GCP aims to coordinate information and forces that scatter in many departments. If we build a comprehensive system of information collection and analysis, we can know in a timely way what is going on and take corresponding measures to prevent eruption of massive incidents…We can identify who is the ‘trouble maker” and the leader. With this kind of information, we can more effectively address problems and keep society in order.\(^{100}\)

District leaders discussed two different types of useful information. *Ex ante* or “infrastructural information” (*jichu xinxi*, 基础信息) on M District’s population could be collected before the emergence of social unrest; *ex post* or “emergent information” (*yingji xinxi*, 应急信息) had to be collected during/after unrest. The GCP collected and integrated both types of information to support both normal/daily social management (*richang guanli*, 日常管理) and crisis management (*yingji guanli*, 应急管理), but officials clearly preferred and prioritized *ex ante* information collection.\(^{101}\) District leaders believed that accurate, timely, and comprehensive “infrastructural information” could help them, gauge public sentiment, assess governance quality, identify potential problems, and prevent the emergence of disruptive contention.\(^{102}\)

In pursuing information-guided preventive coercive capacity, however, M District officials faced the problems of information blindness vis-à-vis their citizens and information islands within the local party-state structure. District officials defined “information blindness” as an outside-system (*tizhiwai*, 体制外) problem and “information islands” as a within-system (*tizhinei*, 体制内) one:

To build a comprehensive information platform for our political-legal work, the government system needs to reach every corner of grassroots society and keep eyes on what is happening.

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\(^{100}\) Interview, GCP district-level center director, 21 September 2012.

\(^{101}\) M District 2009.

\(^{102}\) See Mann 1984 on infrastructural and despotic power.
Otherwise, government would be blind… Many tiao have their own unique information and we lack a unified platform to coordinate scattered information.\textsuperscript{103}

The first problem the GCP sought to resolve had to do with information collection. Officials in M District used the metaphors of sight and blindness to describe information collection work; one officer commented, “The masses’ eyes are bright; they can be the eyes of the blinded government.”\textsuperscript{104} To decrease information blindness, the GCP relied on three main sources of information: street patrols (jiemian sunlao, 街面巡逻), situation reports from neighborhoods/villages (jucun huibao, 居村汇报), and online public opinion (wangluo yuqing, 网络舆情). Street patrols and situation reports used civic organizations at the grassroots to generate useful information for public security/social management: committees were tasked to investigate, identify, and report upward on possible conflicts and threats, and directed to pay special attention to public security challenges including illegal housing/renting, illegal business, and other ‘social disputes’.\textsuperscript{105} Frontline reports were integrated with online information from numerous websites and hotlines via the GCP centers: in 2016, 90% of grid information was collected on the ground, versus 10% from online intake.\textsuperscript{106}

To cover every inch of territory, M District implemented “Community Grid Management” (CGM, shequ wanggehua guanli, 社区网格化管理). M District was an early adopter of grid management, a system now implemented across much of urban China. (Less than half of cities used grid management in 2014-15; an estimated 60+% use it today.\textsuperscript{107}) Neighborhoods were divided into grids (each containing 800-1000 residents in several hundred households), and a team was assigned to watch over each cell of the grid. Infrastructural information was uploaded into the grid; sensitive

\textsuperscript{103} Interview, Committee on Comprehensive Social Management, 22 September 2012.

\textsuperscript{104} Interview, officer in charge of GCP information synthesis, 12 October 2017. This is a reference to a Mao-era saying.

\textsuperscript{105} During the day, Urban Management/Law Enforcement personnel carry out street patrols; at night, public security forces conduct patrols. M District 2014.

\textsuperscript{106} M District, Grid Management Annual Data Report, 2016.

\textsuperscript{107} Economist 2018; Wu 2014.
places that required special attention and monitoring were identified in advance; and information generated by frontline work and online activity was cross-laid onto the grid system as it came in. The scope and scale of surveillance was impressive: by 2010, M District’s grid” had 13 medium grids, further divided into a) 75 small grids based on urban blocks (further divided into 189 “responsibility pieces”), and b) another 516 small grids based on residential communities/villages (1299 “responsibility pieces”). A total of 36,360 officials and other personnel – from police to road cleaners – were involved in providing information to M District’s grid management system: at one for every 50 or so residents, a relatively high ratio of surveillance.108

Adoption of the GCP information-gathering system significantly affected information collection in M District. According to official statistics, by April 2012, village/neighborhood GCP centers had collected 49,797 pieces of information on illegal behavior, enabling departments to open 49,309 cases and resolve 42,657 (86.5%). Of these, 19,981 pieces of information were related to public security; 18,092 (90.5%) had been addressed.109 M District officials also believed that the accuracy of their infrastructural information, a major concern in a district with a large floating population and significant illegal housing, had improved substantially.110 After 2012, grid management continued its major role in information collection and analysis; the number of data points and cases increased each year.

M District’s GCP and grid management systems also aimed to break up information islands by creating an information-sharing platform that integrated previously-fragmented local bureaucracies, and by building a “united big-data center” that employed that information to generate, ‘public security intelligence’ and analysis. (This platform bears notable resemblance to the Integrated

108 Greitens (2016, p. 9) finds that the most intensive authoritarian surveillance projects, such as those in North Korea or East Germany, involved a ratio of one official per 25-50 people.

109 M District, Report on GCP Achievements, 2012. The slightly higher rate of resolution for issues that are public-security-related appears to corroborate the prioritization of these issues.

110 Population and housing information is considered the foundation of “infrastructural information.”
Joint Operations Platform that has been described in Xinjiang, but was implemented almost a decade earlier.\(^\text{111}\) Two major reforms made this possible. First, prior to 2009, each department in M District managed its own functional grid, unconnected to others; the GCP replaced these uncoordinated systems with a single integrated grid across the district’s geographic space. All 52 district-level functional departments (policing, health, sanitation, housing, etc), 13 township/street governments, and 521 village/neighborhood GCP centers were equipped with shared information collection/processing software, and required to upload their information into the shared platform.\(^\text{112}\) The platform also integrated data from online sources (citizen calls/emails; netizen communications via the GCP website or local government mailboxes; and analyses of online public opinion) as well as the information provided by regular local patrols. Then, in real time, it recorded, classified, overlaid, and integrated incoming data with existing sources of information, so that the platform could identify and analyze cases of concern and assign them to departments or grids for resolution. The GCP platform also tracked and evaluated the rate, efficiency, and effectiveness of government response, and provided some of this evaluative data to citizens on its website.

The second reform integrated disparate personnel systems. In 2009, M District had 18,470 social assistants acting as informants or supplementary coercive forces, but they were recruited and controlled by 16 different departments and managed by no fewer than 194 labor organizations.\(^\text{113}\) The GCP reorganized social assistants and the funding that paid for them to align with the new authority granted to township/streets by the revised grid system. Assistants who were previously differentiated into 26 different types all received a standard title, “Grid Patrolman (\text{wangge xunchayuan}, 网格巡查员),” and were given consistent responsibilities, pay, training, and evaluation. Each was


\(^{112}\) Officials also hoped that the use of software would depersonalize social ties in the bureaucracy and avoid interference by personal connections in policymaking.

\(^{113}\) M District 2009.
assigned to a small grid to patrol communities/streets, collect infrastructural information, and assist township/street governments in providing security and public services.

*From Information to Action: Differentiated Demobilization*

M District’s information-centered, preventive approach to social management and coercion played a key role in enabling differentiated demobilization: it triaged ‘emergent issues’ that could threaten social stability, decided what approach should be used; and assigned the issue to a particular bureaucratic actor for resolution.¹¹⁴ M District’s 2009 blueprint outlined a preferred order for dealing with potential threats, illustrated in Figure 3:

**Figure 3: Options to Address Potential Sources of Instability**¹¹⁵

![Options to Address Potential Sources of Instability](image)

These preference orderings roughly translate to the approaches outlined above of concession, coercion, and pre-emptive punishment; the GCP’s role was to decide how many cases could be addressed via the tools on the left or middle of the chain, reserving “law enforcement” (physical repression/pre-emption) for the smallest number of cases possible.

**Concession.** First, authorities used GCP-provided information to dampen the emergence of instability simply by resolving citizens’ complaints. By eliminating (some) grievances around which groups mobilize, local officials can reduce citizens’ willingness to challenge the state. During the outbreak of major protest in Wukan in 2011, for example, the provincial party leader called protestors’ demands reasonable, acknowledged problems with government performance, and promised not to retaliate against protestors after they stood down.¹¹⁶ Jennifer Pan has demonstrated

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¹¹⁴ Dong 2015.

¹¹⁵ Concept outlined in M District 2009; figure created by author.

¹¹⁶ Wee 2011.
that officials often distribute China’s minimum livelihood payments (低保, *dibao*) to targeted populations (重点人, *zhongdianren*), including former prisoners, because of the fear that they will engage in contentious behavior. Many of these efforts, however, have been either reactive (Wukan) or mistargeted (*dibao*), which has compromised their effectiveness.

GCP and grid management systems are being used, therefore, to more effectively target concessions to prevent escalation of protest or social conflict. At a general level, M District’s government research offices and leadership increasingly rely on the GCP database (and GCP-enabled analysis) to generate policy recommendations for ‘meticulous urban management’ (*jingxihua guanli*, 精细化管理). Grid management is then used to identify and solve urban management problems before residents can complain; in Shuangpai County, for example, a grid manager out on daily patrol registered a new business, checked a boarding-house for new tenants, and then used her phone’s ‘social governance e-communication’ app (社治 E 通, *shizhi E-tong*) to report a road problem to the county grid management command center, which dispatched the correct department for repairs. Information can therefore direct public goods provision to the areas that authorities deem most useful for preventing complaints or collective action.

Beyond assigning public goods provision, GCP software can increase overall authoritarian responsiveness by clearly delegating responsibility to one particular actor, and then reminding the tasked department of impending or overdue case deadlines. M District’s GCP platform records and shares late/absent responses with District leaders (and citizens); this makes it difficult for officials to conceal poor performance or corruption. Because the GCP allows District leaders to compare performance data provided by subordinates with feedback reported by residents, it serves a dual function of responsive governance and agent monitoring. Overall, then, GCP data can be used to

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117 Pan forthcoming.
118 Interview, Committee on Comprehensive Social Management, 10 August 2018.
improve the responsiveness of local governance, reducing citizen grievances and dampening their general willingness to challenge the party-state.

Grid management is also used to enable much more targeted distribution of concessions to limit contentious activity. In one Nanjing district, the grid manager learned that the situation of a medically disabled resident was angering residents; she then arranged for the resident to receive *dibao*, housing, and childcare support. An online profile of her work called serving the people “the foothold for grid governance…from resolving small neighborhood disputes to excluding major security risks.” In other cases, grid managers have helped petitioners find employment or other social services in exchange for ceasing petition activity. Concessions can also take the form of simple payoffs. One local official described paying a resident 2,000RMB not to petition Beijing as “very economical,” and a 2010 analysis found that 30% of mass incidents produce a response involving economic compensation, though at that point most compensation was reactive rather than preventive.

**Coercion.** Second, the GCP’s early identification of potential or emergent threats to stability enabled local authorities to demobilize threats via coercion and implicit threat rather than either concession or overt punishment. For example, Nanjing grid manager Li Aihua found out from the grid system that residents who had lost money in an illegal investment scheme, recently broken up by the local public security bureau, planned to visit Beijing to complain. That information included the names of the petition organizers, so grid manager Li visited the home of one organizer, Resident Ding, with a mediator (*tiaojieyuan*, 调解员) and police official (*minjing*, 民警). During her visit to

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123 Tong and Lei 2010.
Resident Ding’s home, Li helped the resident “analyze his own responsibility for participating in illegal fundraising” and consider the “severe consequences and risks” (yanzhong houguo he weihai, 严重后果和危害) of seeking extreme solutions to his problem. Not only did she convince Resident Ding to stand down from his attempt to organize and petition in Beijing, the resident subsequently actively cooperated with authorities to help manage other frustrated investors, thereby protecting against a group incident. Other articles tell similar stories about grid management’s success in preventing petitions and other collective actions that could damage social stability (and the careers of local officials). Again, the GCP’s role is both to identify problems early, and to guide officials in both their selection of a coercive strategy, and its actual implementation in the privacy of a resident’s home.

Pre-emption. Finally, platforms like the GCP can provide information for local officials to pre-emptively suppress contention by force, allowing them to do so in a more targeted and individualized fashion than they would be able to do absent GCP-generated information. As shown in Figure 2 above, pre-emptive approaches tend to be employed when information indicates that concession or coercion are unlikely to work, or when previous efforts to use the other two strategies of demobilization have been tried and proved ineffective.

There are clear examples of GCP-like platforms generating the information that enables pre-emption as a form of demobilization. In one township in M District, for example, more than 5,000 houses have been demolished since 2011, and hundreds of angry petitioners had planned to protest and travel to Beijing to deliver a petition to higher authorities. Using information from the GCP grids, township officials were able to identify the movement’s leaders, detect their plans, and discover the specific details of their complaints and intended appeals to central authorities. Because their travel to Beijing was imminent, local officials used that information to locate the

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“troublemakers” and their associates, block travel pathways to Beijing, and demobilize planned demonstrations. In another instance, the *New York Times* recounted that a protest in Beijing over a fraudulent financial scheme, with an estimated 8,000 intended participants, fizzled because majority were intercepted and physically detained en route to the protest location.

Profiles of grid managers often highlight their roles in providing information to public security to arrest criminals, but the same process can be used to demobilize contention using pre-emptive interception and arrest. Scholarly work on the petition system, for example, has shown that during “sensitive periods” such as regime anniversaries, petitioners are targeted for surveillance, blocked from entering bus/rail stations, and even physically detained in isolation (often temporary house arrest) to pre-empt their pursuit of contentious action. Petition history is one part of the GCP database, and can be merged with other information to determine someone’s history and patterns of contentious behavior, showing authorities what an individual is likely to do, what demobilizational strategies have been tried in the past, and their results. Thus if other approaches have previously failed, or are judged unlikely to succeed, GCP-generated information can be used operationally, to target individuals and pre-empt their ability to act.

Although this last option is what most people probably think of when they see the term “preventive repression,” in fact, all three strategies are forms of preventive social control that interfere with contentious behavior before it escalates or becomes publicly visible. The state does

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125 Interview, township police officer, 20 December 2015.
126 Qian 2019; Liu 2018; see also “Police Lock Down Beijing’s Financial District to Thwart Protests,” *Financial Times*, 6 August 2018, https://www.ft.com/content/58728458-9943-11e8-9702-5946bae86e6d
not simply choose *whether* to engage in pre-emptive repression; it engages in a more complex problem of identifying a course of action from a range of possible demobilizational strategies. This targeted, sometimes-private, and differentiated demobilization atomizes citizens’ experiences of repression, thereby limiting their potential to become the basis of collective identity formation and group-based mobilization.

The approach described in M District has been applied widely within China, and has grown in sophistication and intensity as technological capabilities have advanced. By 2015, 168 of China’s 332 prefectural-level cities were using grid management for social control, with plans for future expansion.\(^{129}\) Under initiatives such as Skynet (天网, *Tianwang*) or the “Bright Snow Project” (雪亮工程, *Xueliang Gongcheng*, also called “Sharp Eyes”), video surveillance and facial recognition are being integrated into grid management platforms, and officials are learning to use the data-integration platforms to identify threats via predictive analytics.\(^{130}\) The Xueliang Gongcheng is now operating in all provinces, and China’s 13\(^{th}\) Five Year Plan calls for implementation to be completed by 2020.\(^{131}\) In March 2018, a graduate student working on surveillance in Hunan province tested the system run by his local PSB; it took the police four minutes and fifteen seconds to locate him, and just over five minutes to take him into custody.\(^{132}\)

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\(^{129}\) Lin 2015; NDRC 2015.

\(^{130}\) *Tianwang* comes from a saying “Tianwang huihui, shu er bulou (Heaven’s net has large mesh, but lets nothing through)”; while *Xueliang* comes from the saying, “Renmin qunzhong de yanjing shi xueliang de (the eyes of the people and the masses are as bright as snow).”


International Implications: China’s Export of Surveillance and Policing Technology

The development of these surveillance and policing technology is not just relevant within China; it has already had global consequences. Currently, the extent to which these technologies have been adopted worldwide is unknown, and there is considerable debate over why third countries are pursuing surveillance and policing technologies provided by China. Policymakers and scholars in the U.S. fear that China is exporting these technologies to “make the world safe for autocracy,” while suppliers and adopters tend to emphasize the need to deal with crime and the importance of public safety for attracting tourism and investment.\textsuperscript{133} A full analysis of what determines patterns in the diffusion of these technologies is beyond the scope of this paper, but the following section provides descriptive data to indicate the importance of the phenomena for contemporary international politics and offer some initial thoughts on patterns in the data.\textsuperscript{134}

The analysis draws on a new dataset, constructed from corporate, media, and government reports in English, Chinese, Spanish, French, Arabic, and Russian, that codes the adoption of Chinese surveillance and policing platforms worldwide from 2008 to 2019. Sometimes referred to as “Safe City” (安全城市) solutions – the term used by these platforms’ largest global supplier, Huawei\textsuperscript{135} – these platforms are generally characterized by a big-data integration and predictive analytics platform that supports one or more high-tech command-and-control centers, and analyzes, in close to real time, information inputs from a wide range of sources (criminal records, other government databases, networked surveillance cameras, facial and license plate recognition applications, etc). Huawei, for example, describes its Safe City Solutions as providing:

\begin{quote}
…[W]orld-leading Collaborative-C4ISR [Command, Control, Communication, Cloud, Intelligence, Surveillance, and Reconnaissance] solutions that enable crucial visualization and convergence to maximize public safety….The safe city solutions jointly developed by Huawei and our partners enable advance prevention, precise
\end{quote}

\textsuperscript{133} Myat Pyae Pho 2019.

\textsuperscript{134} Eventually, I hope to spin this analysis off into a separate paper focused on the drivers of diffusion of surveillance and policing technology.

\textsuperscript{135} Huawei is the world’s biggest provider of network telecommunications equipment; Vaswani 2019.
resource allocation, efficient analysis, visualized command, and efficient coordination among multiple departments. They help governments reduce crime rates and prevent and respond to crises more effectively, ensuring a safer environment for all.\textsuperscript{136}

Elsewhere in Huawei’s materials, the central data-integration and analytics platform is referred to as the “nerve center” and various collection devices are analogized to senses. In addition to Huawei, China National Electronics Import and Export Corporation (CEIEC), ZTE, and other Chinese companies are also commonly involved in the provision of PST platforms and technology. It is not uncommon for multiple companies to be involved as vendors or contractors in different parts of a project, and the companies involved also sometimes provide consulting or training in how to employ the technology in addition to selling the tools themselves.

This new data demonstrates that policy analyses have significantly understated the extent of use of Chinese surveillance and policing technologies around the world, as well as the speed with which they have been adopted globally. For example, a 2018 Freedom House report discussed use of Chinese surveillance technology in 18 countries; an April 2019 report by the Australian Strategic Policy Institute covered 43 countries.\textsuperscript{137} By contrast, Huawei’s 2018 annual report stated that its Safe City Solutions “now serve over 700 cities across more than 100 countries and regions,” a figure that had tripled since 2015 (see Figure 4).\textsuperscript{138}

\textsuperscript{136} Huawei 2017a: 31. Safe City platforms are a subcomponent of “Smart City” projects, which Huawei describes as providing a “nervous system” for the city; SafeCity platforms are specifically focused on public safety. Huawei 2017b.

\textsuperscript{137} Shahbaz 2018; Cave et al 2019.

Corporate self-reporting on the number of countries is subject to two possible and cross-cutting forms of bias. On the one hand, suppliers may have incentives to exaggerate the numbers to advertise the popularity of their products; on the other hand, as scrutiny of these companies (especially Huawei) has increased, companies may downplay the extent of their involvement or seek to hide it.\textsuperscript{139} The research team therefore sought to independently confirm specific cases of adoption on a country-by-country basis, and has independently confirmed adoption in approximately 80 countries thus far.\textsuperscript{140} The number and location of these adopting countries are shown in Figures 5 and 6.

\textsuperscript{139} Huawei declined to provide a list of the 100+ countries mentioned in its annual report, citing non-disclosure agreements with clients. Huawei, personal communication with the author, June 2019.

\textsuperscript{140} The use of countries as the unit of analysis is somewhat misleading. In many cases, the original contract or memorandum of understanding is signed by a subnational government (region or municipality). Huawei’s term “Safe City” also suggests the original scale envisioned for the platform, though region- and nation-wide systems have been established. The heterogeneity of subnational units involved, combined with availability of independent variable data at the country-year level, make this the most feasible design at present.
Figure 5: Chinese Public Security Technology Platform Adoptions (2008-18)

Figure 6: Locations of Chinese Public Security Technology Platform Adoptions (2008-2019)
What factors might be driving the spread of these technologies worldwide? Current literature, drawn from both scholarly work and policy analysis, suggests four main possible explanations.

- First, analysts have suggested that China is supplying these technologies to countries as “a key component of Chinese geopolitical strategy.”  

- A second family of explanations argues that China is “making the world safe for autocracy” by exporting these technologies to bolster authoritarian control. This could be interpreted in two ways: that these technologies are more likely to be adopted in less democratic regimes, or that weak/unstable countries are more likely to adopt these technologies. (This could also be a statement about the effects of adopting these technologies, rather than drivers, but effects are beyond the scope of this paper’s analysis.)

- Third, adopting these technologies could be a straightforward response to high crime rates.

- Fourth, the literature on military diffusion suggests that adoption of innovative technologies is facilitated by higher financial and organizational capacity. We are skeptical of the applicability to China for several reasons: the financial costs of these platforms are low compared to advanced military hardware; platform adoption is often subsidized in various ways by China; and governments that are struggling to perform may have higher incentives to pursue adoption, even if they subsequently struggle with implementation.

It would be methodologically problematic to attempt to make inferences about the drivers or causes of the adoption of Chinese surveillance and policing technology based on the dataset as it stands now, for several reasons. Not only are these observational data, but missing data is a significant

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141 Feldstein 2019a; 2019c.


143 Huawei, for example, advertises Safe City platforms as “public safety solutions,” and its “global chief public safety scientist” has claimed that violent crime costs Latin America $261 billion annually (3% of GDP). It advertises that adoption of the Safe City platform in Nairobi and Mombasa reduced crime by 46% in the first year of operation, and boosted tourism (a major revenue source for Kenya) by 14%, and its agreement with the Philippines sets a target of 15% reduction in the crime rate. Koh 2018; see also Huawei n.d.; O’Rourke and Choy 2019; Siu 2019; Elemia 2018.
problem on several independent variables (approaching 50% in some cases), and missingness is likely non-random.\textsuperscript{144} Moreover, there is heterogeneity in the dependent variable observations that are coded as zeroes: some of these observations are true non-adopters, while others are missing adopters; publicly available sources do not (yet) allow us to distinguish between the two with confidence.

Some preliminary descriptive analysis, looking for initial associations in the data, appears in the Appendix.\textsuperscript{145} Cumulatively, this preliminary analysis suggests the following. Chinese strategic partnership appears to be positively and significantly associated with the adoption of Chinese surveillance and policing technology platforms. Violent crime also correlates positively with the adoption of Chinese surveillance and policing platforms. Both of these correlations are in the expected direction. By contrast, neither the level of democracy nor the level of political instability in a country correlates significantly with the likelihood of adoption – suggesting that any ideas about China exporting this technology to “make the world safe for autocracy” hinge on the post-adoption effects of this technology, rather than explaining where it is exported and adopted. Finally, variables generated from theories of military-technological diffusion return mixed results: consistent with existing theories, financial capacity is positively correlated with adoption.\textsuperscript{146} Contrary to existing theory, however, government effectiveness is negatively correlated with adoption, meaning that less effective governments are more likely to agree to adopt surveillance and policing technology from China (a result that makes some sense given the findings on crime, above). Together, this seems to

\textsuperscript{144} For debate on how to deal with missingness when it is MAR/MNAR, especially the pros and cons of multiple imputation, see King et al 2001; Lall 2016; Pepinsky 2018.

\textsuperscript{145} The Appendix includes variable descriptions, summary statistics, bivariate correlations, and a descriptive logit. There are valid theoretical arguments for using either a logit (explaining adoption) or a Cox model (explaining survival/time to adoption). Although statistical significance is slightly lower in the Cox model, the two models return very similar results, with the exception that when strategic importance is operationalized as ordinal rather than binary in the Cox model, GDP per capita (logged) loses statistical significance. I have included the logit results in the Appendix for ease of interpretation.

\textsuperscript{146} This is somewhat surprising given the anecdotal evidence of Chinese subsidization of these projects, but consistent with theories on military diffusion, such as Horowitz (2010)’s adoption-capacity theory.
suggest a divergence in patterns of technological adoption for military vs. domestic security technology. Again, however, given the data quality issues and potential threats to causal inference, these results should be interpreted as exploratory and descriptive.

**Conclusion**

Under Xi Jinping, China has pursued a surveillance state of immense scale and ambition. This paper suggests that the CCP has pursued intensified surveillance in order to enhance its capacity for preventive repression. Information facilitates preventive repression because it not only reveals citizens’ underlying distribution of preferences, but matches individuals to specific locations on that distribution, identifying both the type and level of grievance they possess. It then also facilitates strategy selection, allowing the regime to assign individuals to one of several differentiated demobilization strategies in a process that maximizes the likelihood of success and minimizes risks of backlash. Qualitative evidence from within a local district’s coercive apparatus demonstrated that leaders prioritize prevention, see information as critical to achieving preventive coercive capacity, and seek to employ surveillance and policing technologies to solve specific information problems and pursue differentiated demobilization of individual citizens.

Theoretically, the project finds that information shapes the balance between concession, coercion, and pre-emption in authoritarian regimes, and builds on existing literature by showing that there are individual-level variations in a regime’s intelligence capacity vis-à-vis citizens even under conditions of (relative) ethnic homogeneity. Practically, the rise of the Chinese surveillance state has had global consequences; over the course of the past decade, Chinese surveillance and policing technologies have been adopted in more than 80 countries worldwide, both democratic and autocratic, on every continent except Australia (and Antarctica). As noted above, therefore, China is an ‘index case’ for a set of technological and informational conditions that have spread to such an extent that they now characterize political life in much of the world.
Many important questions remain unanswered at present. One of the central questions to be pursued is simply: does this technology work – and if so, what results does it produce, under what conditions? Future research could examine the efficacy of this technology for both political control and crime reduction, and explore how different social, political, and bureaucratic factors that vary across implementation contexts might generate variations in effectiveness, inside China and abroad. Another line of research could analyze citizen reactions to technologically-based surveillance and differentiated demobilization using survey or experimental approaches. Finally, the preliminary data on international diffusion of Chinese surveillance and policing technology provided above would benefit greatly from further empirical refinement, as well as comparative analysis and theorization: how did great powers in previous eras disseminate models of public security and police technology, and in what ways are these patterns similar or different to those of China today? What does a comparison of these patterns tell us about the drivers of this diffusionary process?

The project’s findings also have important implications for policy. For American foreign and security policy, the data provided here suggest that rhetoric expressing concern over about China’s “digital authoritarianism” 147 should begin to incorporate a much more nuanced understanding of the incentives and interests of adopting countries, and an acknowledgment that these technologies are now widespread in democratic as well as autocratic political systems. Given the virtual absence of de-adoption from the international system thus far, it may make sense for the U.S. or the international community to focus more on establishing strong norms of legal constraint around these technologies’ use than to try (belatedly) to prevent their adoption altogether. Indeed, UN Special Rapporteur David Kaye recently called for the development of global standards to regulate the domestic use and international export of surveillance technology, by both government

147 China’s expansion into the overseas “safe city” market has already raised concerns in the Pentagon that the move will increase these companies’ “access to foreign talent and data” in ways that are not beneficial to the U.S. or its partners, and other work expresses concern that the growing use of Chinese surveillance and policing technology in third countries could bifurcate the world into adopters and non-adopters. U.S. Department of Defense 2019: 101; Hammond 2019.
and private actors. The findings contained here about the rapid proliferation and contemporary prevalence of this technology both confirm the importance of that discussion, and also provide some indication of how difficult it is likely to be.

\[^{148}\text{UN 2019.}\]
APPENDIX:

VARIABLES & EXPLORATORY DATA ANALYSIS

Explanation of Variables:

Chinese Surveillance Technology Adoption (dependent variable): Binary variable coded 1 for the year in which the initial contract/agreement to adopt was signed, and every year thereafter. A separate Appendix with sources used to justify coding decisions will be published online.

Strategic Importance: Measured using an ordinal variable (0-4) created by the author to categorize variations in the level of “strategic partnership” listed on the PRC Ministry of Foreign Affairs’ webpage. Robustness checks include a binary version of this variable, and a binary variable measuring membership in the Belt and Road Initiative.

Level of Democracy: We test whether less democratic countries are more likely to adopt Chinese surveillance and policing technology using Polity (-10 to 10 scale).

Political Stability: Measured using V-Dem’s Political Stability indicator (-3 to 2), which “combines several indicators [that] measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possible unconstitutional and/or violent means, including domestic violence and terrorism.”


Financial Capacity: Measured using GDP per capita. Robustness checks employ military spending to proxy for willingness/capacity to spend on security.

Organizational/Bureaucratic Capacity: Operationalized using the World Bank’s Government Effectiveness indicator, which assesses the capacity of government bureaucracies (defined as “Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.”

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149 PRC MOFA 2019; on interpreting these partnerships, see Feng and Huang 2014. Note that China does not pursue formal alliances, with the partial exception of North Korea, which we code at the highest level of strategic partnership. On the strategic logic of arms transfers, see Spindel 2018; Yarhi-Milo et al 2016; Johnson and Willardson 2018.

150 See https://www.v-dem.net/.

151 Data provided to the author upon request.

152 Conventional wisdom is to use military spending to proxy internal coercive capacity. Albertus and Menaldo 2012; Bellin 2004; Wang 2014; for a China-specific critique of these approaches, see Greitens 2017.

Table 1: Summary Statistics

<table>
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<th></th>
<th>Obs.</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
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Table 2: Bivariate Correlations with Chinese Surveillance Technology

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</table>

$t$ statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$
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