CHAPTER ONE

Introduction

> China has four million websites, with nearly 700 million Internet users, 1.2 billion mobile phone users, 600 million WeChat and Weibo users, and generates 30 billion pieces of information every day. It is not possible to apply censorship to this enormous amount of data. Thus censorship is not the correct word choice. But no censorship does not mean no management.
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> — Lu Wei, Former Director, State Internet Information Office, China, December 2015[1]

1.1 THE PUZZLE OF POROUS CENSORSHIP

As more people around the world gain access to the Internet, government censorship seems an increasingly futile exercise. Traditional conceptions of censorship that could completely control information, such as watertight bans on access, prepublication review, or government-enforced prohibitions on content, seem silly when you consider that every second millions of Internet users around the world are sending one another instant messages, participating in online forums, and tweeting to hundreds of thousands of followers. Even the world's most famous censors recognize this reality. As the former "gatekeeper of the Chinese Internet" Lu Wei stresses in the epigraph to this chapter, the thirty billion pieces of information generated each day by Chinese citizens quite simply cannot be censored.

[1] "美记者质疑中国"网络审查" 鲁炜:内容审查用词不当" December 9, 2015. Available at: http://news.china.com/domestic/945/20151209/20903585.html.

Yet recognizing the impossibility of complete control of online discourse has not kept authoritarian regimes from spending billions of dollars trying. On the face of it, authoritarian efforts of information control seem halfhearted. Even censorship in one of the most sophisticated censorship regimes in the world—China—could be seen as faltering attempts at "information management." For the most part, these efforts at censorship are porous—frequently circumvented by savvy Internet users, accidentally evaded by citizens wasting time on the web, and rarely enforced with punishment.[2]

Indeed, most censorship methods implemented by the Chinese government act not as a ban but as a *tax* on information, forcing users to pay money or spend more time if they want to access the censored material. For example, when the government "kicked out" Google from China in 2010, it did so simply by throttling the search engine so it loaded only 75 percent of the time.[3] If you wanted to use Google, you just had to be a bit more patient. The Great Firewall, China's most notorious censorship invention that blocks a variety of foreign websites from Chinese users, can be circumvented by savvy Internet users by downloading a Virtual Private Network (VPN). Social media users in China circumvent keyword censoring of social media posts by substituting similar words that go undetected for words that the government blocks, making content easy to find if you spend more time searching.[4] Newspapers are often instructed by

[2] Yang (2009*a*, pg. 2) describes many of the ways in which Chinese netizens circumvent Internet control and calls government control over the Internet "only partly effective." Xiao (2011) similarly emphasizes how Internet controls in China are easily evaded.

[3] Millward, Steven, "Google+ Not Actually Blocked in China, Just Being Slowly Throttled," *Tech in Asia*, June 30, 2011. Available at: https://www.techinasia.com/google-plus-china.

[4] Branigan, Tania, "How China's internet generation broke the silence," *Guardian*, March 24, 2010. Available at: https://www.theguardian.com/world/2010/mar/24/china-internet-generation-censorship; Hiruncharoenvate, Lin and Gilbert (2015).

censors to put stories on the back pages of the newspaper, where access is just a few more flips of the page away.[5]

Porous censorship is not unique to China or even to the modern time period. Instead of shutting off the whole Internet, Iran has been known to simply throttle it and make it slower during elections.[6] The Russian government uses armies of online bots and commentators to flood opposition hashtags and make it more difficult, but not impossible, for people to find information on protests or opposition leaders.[7] Even before the Internet, in the late nineteenth century, British censors banned translations of French literature they considered obscene, but allowed untranslated versions to circulate freely, allowing unlimited access to those willing to expend the effort to read them in French.[8] In East Germany during the cold war, the government decided against enforcing restrictions on satellite dishes that enabled citizens to watch West German television, effectively allowing East Germans who were interested enough to find a way to buy a satellite dish to have access to it.[9]

Why do governments attempt to control information when these controls are easily circumvented? Conventional wisdom posits that these porous censorship strategies are futile for governments as citizens learn quickly to circumvent censorship that is not complete or enforced. Many have stressed that information, which is often called "non-excludable" because it is

[5] "Ministry of Truth: Personal Wealth, Income Gap," *China Digital Times*, February 6, 2013. Available at: https://chinadigitaltimes.net/2013/02/ministry-of-truth-personal-wealth-income-gap/.

[6] See Aryan, Aryan and Halderman (2013, pg. 5) and Esfandiari, Golnaz "Iran Admits Throttling Internet to 'Preserve Calm' During Election," *Radio Free Europe*, June 26, 2013. Available at: http://www.rferl.org/a/iran-Internet-disruptions-election/25028696.html.

[7] Goncharov, Maxim, "The Dark Side of Social Media," *TrendLabs Security Intelligence Blog*, December 7, 2011. Available at: http://blog.trendmicro.com/trendlabs-security-intelligence/the-dark-side-of-social-media/.

[8] Reynolds (2014, pg. 188).

[9] Kern and Hainmueller (2009, pg. 394–395).

easily shared, is difficult to control once it has become known to a portion of the public, as it can spread quickly.[10] "Information wants to be free," originally coined by Stewart Brand, captures the idea that information technology makes information easy to copy and thus difficult to control.[11] More puzzling is that many governments have the capacity to enforce censorship more forcefully, but choose not to do so. Periodic VPN crackdowns indicate that China could make the Firewall less permeable, but much of the time the government chooses not to.[12] The government could implement draconian punishments for those who evade censorship, creating strong disincentives for circumvention, but most circumvention is not even illegal. Using censorship that taxes, rather than prohibits, information in China—and in other countries around the world—seems to be a design choice, not an operational flaw—but why?

1.2 DISTRACTION AND DIVERSION

In this book, I shed light on the puzzle of porous censorship by showing that even easily circumventable censorship has an important impact on information access for the typical person in most circumstances, and, for this very reason, is strategically useful for authoritarian regimes. Many censorship methods require citizens to spend more time or money accessing

[10] Taubman (1998, pg. 266) stresses that the decentralized nature of the Internet means no censorship methods are foolproof. Yang (2009*b*, pg. 30) contends that online activism is powerful because it can be more easily multiplied. Esarey and Xiao (2011) show that digital media has more critical content than newspapers in China.

[11] Barlow, John Perry, "The Economy of Ideas," *Wired*, March 1, 1994. Available at: https://www.wired.com/1994/03/economy-ideas/.

[12] "China Cracks Down on VPNs During Political Meetings," *Wall Street Journal*, http://blogs.wsj.com/chinarealtime/2016/03/10/china-cracks-down-on-vpns-during-political-meetings/.

information that the government would like to slow down. Only a minority of citizens who are interested enough in the information and have the education and resources to pay the costs of evasion are motivated and equipped enough to circumvent censorship. For the majority of citizens, who are less interested in politics and are not willing to spend significant time becoming informed,[13] small costs of access and government distractions can divert citizens to information that is less dangerous to the regime. Even though it is possible to access most information, as normal citizens get lost in the cacophony of information available to them, their consumption of information is highly influenced by the costs of obtaining it. I argue that there are massively different implications for the spread of political information of having certain information completely free and easy to obtain as compared to being available but slightly more difficult to access.

Part of the inconsistency between conventional wisdom about censorship and the reality of censorship results from the lack of conceptual clarity about the mechanisms by which censorship affects the public's consumption of information. We lack a theory of censorship. I provide a typology of the three ways in which censorship can affect individuals. What most people think of when they think of censorship is *fear*—threats of punishment, such as losing a job, prison, or worse—which may deter citizens from spreading or accessing information. Fear works by prohibiting particular information and through this inducing self-censorship. But the threat of punishment must be observable to be credible—those who are not aware

[13] Many scholars in political communication have shown that most people are not willing to spend time informing themselves about politics. For example, Sniderman, Tetlock and Brody (1991) show that voters rely on heuristics to make political judgements, Popkin (1994) explores how voters use information shortcuts to make choices, Conover and Feldman (1984) develop a theory of how people have ideology under low information, and Hamilton (2004, pg. 11) explains how media consumers can be rationally ignorant.

of punishment cannot be deterred by it. Although fear is a more complete form of censorship because it can be enforced, fear is problematic for authoritarian regimes because it can cause backlash, draw attention to censored information, and create information-gathering problems for governments. Fear is more difficult to use in the digital age because prohibitions on information are difficult for governments to enforce when information is easily copied.

The other two less well-known censorship mechanisms I introduce—*friction* and *flooding*—have proven themselves more useful in the age of the Internet. Friction—increasing the costs, either in time or money, of access or spread of information—diverts citizens' attention by imposing barriers to information access. A slow webpage, a book removed from a library, reordered search results, or a blocked website can all be used to increase the costs of access to information. Friction is often circumventable—it can be evaded simply by sustaining these costs. However, it does not have to be observable in order to work and therefore can more easily be explained away or go unnoticed. Friction's counterpart, *flooding*, is information coordinated as distraction, propaganda, or confusion, such as astroturfing, online propaganda, or government-mandated newspaper articles. Flooding competes with information that authoritarian governments would like to hide by diluting it and distracting from it. As with the friction mechanism, while flooding can be discounted or avoided, flooding requires the consumer to take time and effort to separate out good information from bad information.

I offer a wide range of empirical evidence—from online experiments to nationally representative surveys, datasets of millions of geo-located social media posts, and leaked propaganda archives—to show that friction and flooding effectively divert and distract most people away from censored information. Even though a minority of people will pay the costs to circumvent censorship, friction and flooding are useful to

governments because they separate those who are willing to pay the cost of evasion from those who are not, enabling the government to target repression toward the most influential media producers while avoiding widespread repressive policies. I focus my empirical evidence on the citizen production and consumption of information on the Chinese Internet. China is a nearly ideal case for testing how each mechanism of censorship affects citizens' consumption of information and political behavior because the Chinese government implements a wide variety of censorship tactics, which function through each of the three censorship mechanisms. Furthermore, China's censorship system has become the model for many authoritarian regimes: evidence exists that others are trying to emulate it.[14] A better understanding of how the Chinese censorship system works will allow us to predict the future impacts of information control across a wide range of authoritarian regimes.

Censorship is difficult to study empirically because it is often intended to go undetected. Recently, entire subfields in computer science have emerged dedicated to detecting censorship because governments are not typically forthcoming with their tactics.[15] In this book, I move beyond what is censored to take up the challenging task of measuring individuals' reactions to censorship *while* they are being subjected to it. Using large social media datasets, measures of the spread of online information, online experiments, and surveys, I answer the questions: How do individuals react when observing censorship? How does Internet users' behavior change when particular pieces of information are more difficult to access? Are Internet users who come across distracting online propaganda likely to spread

[14] See Diamond (2015, pg. 151), and Soldatov, Andrei and Irna Borogan, "Putin brings China's Great Firewall to Russia in cybersecurity pact," *Guardian*, November 29, 2016, https://www.theguardian.com/world/2016/nov/29/putin-china-internet-great-firewall-russia-cybersecurity-pact. As a result, scholars have advocated for more research on the Chinese censorship system; see Shorey and Howard (2016).

[15] For an overview of the challenges measuring censorship see Burnett and Feamster (2013).

and share it? The evidence I present shows that although many people are resistant to censorship when they notice and observe it, they are very affected by it when they are inconvenienced by it, do not notice it, or can explain it away.

My findings of how censorship influences individuals may explain why we see so many regimes using porous censorship strategies even though these methods are easy to thwart. Although many would see the fact that a minority of capable citizens can route around censorship as detrimental to the regime's censorship efforts, I argue that circumventible censorship can be useful to authoritarian regimes precisely because it has different effects on different segments of the population. Porous censorship drives a wedge between the elite and the masses. The savvy members of the elite easily circumvent censorship, discount propaganda, read blocked information, and enter into banned social networks. By contrast, friction and flooding prey on the rest of the public's short attention spans, busy schedules, and general lack of interest in politics, nudging them toward an information environment that is disconnected from their more well-educated, well-to-do, and politically sophisticated counterparts. By separating the elite from the masses, the government prevents coordination of the core and the periphery, known to be an essential component in successful collective action.[16] Although a portion of savvy and politically concerned citizens may be willing to pay the costs imposed by friction and flooding, less interested individuals often are not, making wider discontent among the broader population significantly less likely and reducing the accountability of political entities.

The strategy of porous censorship allows the government to avoid widespread use of observable repression, which is well

[16] Barberá et al. (2015) show that the periphery is critical to the success of protests, Steinert-Threlkeld (2017) shows that the periphery can even instigate successful protests, and Chenoweth and Stephan (2011, pg. 39–40) show that total numbers and recruitment are a strong predictor of successful protest movements.

known to spark popular backlash.[17] Autocrats face significant trade-offs when making citizens fearful of speaking out. Highly constraining forms of censorship that operate through deterrence must be observable to their targets; otherwise deterrence cannot work. As I will show using social media data, surveys, and online experiments, when censorship is observable, political entities call attention to the information they would like to make off-limits. The observation of censorship intended to create deterrence can instead create opportunities for push-back, signal government weakness, and create increased interest in the off-limits topic. Repression that deters citizens from speaking out also creates information and surveillance problems for the government, as governments often rely on input from the media and population to identify local corruption and on information in the public sphere to identify new pockets of dissent.[18]

Incomplete censorship, by contrast, is more easily masked by political entities, giving the government the cover of plausible deniability.[19] Flooding can front as concerned citizens who are voluntarily writing pro-government content online or are spontaneously gathering in a pro-government parade, and friction can front as technological errors or algorithmic quirks, which ordinary citizens may not be aware of or may explain away. If a link on the Internet redirects to an error page, it is difficult to tell whether the page is down or the government has blocked it. If a book is missing from a library shelf, is it lost, not ordered, or removed by the government? If a social media post does

[17] Dickson (2016, pg. 7).

[18] Egorov, Guriev and Sonin (2009); Liebman (2005); Lorentzen (2014); Shirk (2011, pg. 19); Stockmann (2012, pg. 140); Qin, Strömberg and Wu (2017).

[19] Stockmann (2012) makes a similar argument about the traditional media in China, arguing that the commercialization of the media provides cover for government propaganda. The concept of plausible deniability has also been used widely in the literature on repression, for example, Conrad and Moore (2010, pg. 461) argue that plausible deniability of torture allows the state to shift the blame.

not appear in a news feed, is it because the algorithm predicts you might not be interested in it, or because of government manipulation?[20] Because information is widespread and has many substitutes, small impediments to reading information and even silly distractions can significantly affect users' consumption of political information.

The strategy of porous censorship does, however, have an Achilles' heel. Although for most citizens most of the time, small impediments to accessing information and government-encouraged distractions can divert them to more benign information, there are cases when the typical citizen will take the time to seek out restricted information and evade censorship. I show that in periods of crisis, such as the 2015 Tianjin explosion, citizens are more likely to spend time seeking out methods of accessing restricted information. Similarly, when censorship is imposed suddenly and disrupts habits, such as the case of the Instagram block during the 2014 Hong Kong protests, citizens are more likely to find ways to continue consuming information and entertainment to which they are accustomed.[21] Thus, the strategy of porous censorship can be counterproductive and dangerous to the regime when it uses this censorship too decisively during times it needs censorship most. If information were to disrupt the Chinese political system, it would be during a period when the majority of people were willing to pay the price imposed by censorship to collectively inform themselves.

1.3 IMPLICATIONS AND CHALLENGES TO CONVENTIONAL WISDOM

The findings I present in this book challenge many conventional notions of censorship and have implications for research

[20] See Knockel, Ruan and Crete-Nishihata (2017) for an example of how censorship is used surreptitiously in the Chinese social media platform WeChat.

[21] Hobbs and Roberts (2016).

in digital politics, the politics of repression, and political communication.

Censorship Is More Than Fear

First, this book speaks to the strategies that modern autocracies use to prevent large-scale dissent. Many scholars have puzzled over the resilience of some authoritarian regimes.[22] Some argue that the resilience of autocracies is due in part to successful repression; that autocrats have survived by forcefully extinguishing opposition groups.[23] Others have maintained that autocrats are successful in part by creating institutions that are better able to share power with the opposition and respond to citizens' concerns.[24] Still others have credited authoritarian resilience to brainwashing or enforced symbolism, through cult-like nationalism, religion, or ideology.[25]

In this book I demonstrate that autocrats have methods outside of direct repression, accommodation, or brainwashing to maintain power, even in the modern era. Autocrats have a large toolbox available to them to nudge citizens away from activist circles, dangerous information, and focal points that could facilitate coordination.[26] These methods are not forceful, do not accommodate, and are often not meant to directly persuade. Instead, they create small inconveniences that reroute users

[22] Nathan (2003); Anderson (2006); Gilley (2003).

[23] Davenport (2007, pg. 7) describes the "Law of Coercive Responsiveness," that autocrats respond to opposition movements with force. Brownlee (2007, pg. 33) argues that autocrats have been able to repress opposition groups to consolidate power.

[24] Wintrobe (1990, pg. 851) and Wintrobe (1998) stresses the patronage and public services dictators can provide as a substitute for repression. Dickson (2016); He and Warren (2011); and Lorentzen (2013) elaborate on how the Chinese government creates channels to respond to citizens' concerns. Magaloni (2008); Bueno De Mesquita et al. (2003); and Boix and Svolik (2013) describe how dictators create power-sharing institutions to prevent overthrow by other elite.

[25] See Wedeen (1999).

[26] Note that this is the same "nudge" logic with a darker take as that used in the behavioral economics literature; see Thaler and Sunstein (2009).

to information and social networks that are more palatable to the regime, decreasing the mobilization capacity for opposition, often without citizens being aware of it. Although less forceful than repression or brainwashing, these methods are surprisingly effective in changing the behavior of the vast majority of citizens who are too busy to engage deeply in politics.

Censorship Is Customized

Second, this book speaks to a long-standing question of whether and how governments can control social media in the information age. Many scholars believed that the Internet, which expanded the number of citizens involved in public discourse, would force governments to become more accountable to citizens because of the speed with which large numbers of citizens could participate in everyday public debate.[27] Yet the failure of the Internet to create the expected accountability in some authoritarian regimes led other scholars to argue that this new technology in fact played into the hands of the autocrats.[28] Some of these writers hypothesized that the Internet had not reached its political potential because of extreme self-censorship and fear.[29] Others discerned that the Internet created opportunities for authorities to use sophisticated hidden technologies that could manipulate citizens without their consent or being aware of it.[30]

The findings in this book cut a middle path between these arguments by showing that Internet censorship has very different impacts on different types of individuals, which allows

[27] Ferdinand (2000, pg. 5), Lynch (2011), Bellin (2012, pg. 138), Diamond (2010, pg. 70).

[28] Morozov (2011), MacKinnon (2012), Kalathil and Boas (2010), Rød and Weidmann (2015), Steele and Stein (2002).

[29] Kalathil and Boas (2010, pg. 26), Wacker (2003, pg. 88).

[30] MacKinnon (2012, pg. 6), Morozov (2011, pg. 97).

governments to use these differential effects strategically to maximize censorship's impact while minimizing its costs. The findings in this book suggest that the low probability of the government following through on punishment for millions of Internet users who engage daily in off-limits discussion has diminished the government's ability to enforce self-censorship on those engaged in public discourse. Self-censorship, by itself, does not "purify" the Internet in many authoritarian regimes as some have suggested, and online criticism of autocrats is commonplace.[31] For the majority of citizens, this book provides evidence that political entities have a wide range of effective tools available to them to interfere with the Internet without citizens being aware of it or motivated enough to circumvent it.[32] However, these tools work not because they are sophisticated enough to prevent access to information, but precisely because they have holes: they can affect the majority of the public's information-seeking behavior simply by inconveniencing them, without interfering so much to cause widespread public backlash. Small costs of access, not draconian punishments or sophisticated manipulation, can have huge effects on the behavior of the majority.

Because censorship affects different segments of the population differently, its impact is more than simply hidden manipulation and instead is a story of customized repression. The fact that the majority are affected by diversion and distractions allows regimes the flexibility to selectively target punishment for speech toward journalists, activists, and other high-profile elites. Because friction and flooding are not effective for highly capable and motivated individuals, autocrats use targeted

[31] Zhang, Yuxin, "China: Self-Censorship Displaces Western Threats," *Diplomat*, March 3, 2015. http://thediplomat.com/2015/03/china-self-censorship-displaces-western-threats/.

[32] This finding provides support for some of the arguments in MacKinnon (2012) and Morozov (2011).

fear to contain the spread of information at elite levels.[33] Just as the Internet has enabled more micro-targeting of information and advertising toward particular individuals, the evidence I present suggests that censorship as well is becoming increasingly customized to individual behavior and capabilities.

Despite the cunning of the Chinese censorship system, I highlight the ways in which the censorship system can be undermined in particular periods. I show that the regime is more constrained in making censorship porous during crises when individuals are motivated to seek out information. The more that citizens are willing to overcome friction, the less able the government is to use censorship methods other than fear. This puts the government in a difficult situation, as direct repression will frequently cause backlash. Although the government will try to ramp up all forms of censorship during periods of crisis, these are also the periods that are most likely to force government accountability and concessions.

More Media Does Not Always Lead to Better Information

I caution against a rosy economic model of information where more producers of information will always lead to better information outcomes. Some scholars have posited that as the number of producers of information and media outlets increases, the government's influence over the media will decrease because governments will have a more difficult time forcing media to keep silent.[34] One implication is that the digital age, where there are many more producers of information, will lead to a less biased news media.[35]

[33] This finding is more in line with arguments made in studies that emphasize the impact of fear in controlling the spread of information. Kalathil and Boas (2010); Wacker (2003).

[34] See Besley and Prat (2006, pg. 4), Gentzkow, Glaeser and Goldin (2006, pg. 189).

[35] Edmond (2013, pg. 1441).

However, these models only consider coercion of media and media capture as methods of censorship and do not consider the impacts that governments have on the *distribution* of information. The results in this book show that even if media that contains better information exists, if government can create frictions on the distribution of information through censorship, then this media will not reach most of the public.[36] Governments that have direct control over information distribution can use friction to de-prioritize media that they find to be objectionable. Even if articles on the Internet contain good information, if they are buried in a search engine by government censorship, very few people will access it.

Moreover, even if governments do not directly control the distribution of information, they can use the fact that anyone can enter into the Internet discourse to flood the information environment with their own version of events. By hiring paid commentators or distributing online propaganda, governments can crowd out information that they find objectionable, undermine the credibility of competing media, and distract citizens from events that reflect badly on them. Counterintuitively, the ability for anyone to produce media can result in the production of less reliable information because some governments and entities will have incentives and resources to produce and spread unreliable information en masse.

A Broader Definition of Censorship Has Implications for Democracies

Last, because this book is about censorship that does not always function through fear, it has broader implications for censorship outside of authoritarian systems. Democracies generally have

[36] Edmond (2013, pg. 1442) allows for the possibility that governments can invest in "large-scale fixed investments for information control" online that may allow them to control the Internet despite the decentralized nature of the Internet.

laws that prevent them from directly repressing free speech—they cannot use fear-based methods of censorship. However, democratic governments have vast powers to affect the costs of access to information by producing legislation that regulates information such as the availability of data, the transparency of the government, and the functioning of the Internet. The findings in this book suggest that even small impediments to access imposed by any regime can have significant political effects, and therefore that manipulation of information in democracies can also have a widespread impact on the public's political knowledge.

As I will discuss in the conclusion, recent events in democracies highlight the importance of a broader definition of censorship. Evidence that taxes on the accessibility of information can have large political impacts[37] suggests that society should be concerned with the extent that a few Internet companies and Internet service providers have primary control over the speed and convenience with which information can be accessed. If too few individuals, companies, or politicians wield significant power to make certain political information easy to access while making other information more difficult (for example through fast lanes on the Internet or reordering search results) in an effort to advance their own interests, this could have political impacts in democracies similar to the impacts of search filtering and firewalls in autocracies. Similarly, as traditional media have been decimated by competition from the Internet, small costs of access to data imposed by federal or local government may have an impact on content reported to the public in the traditional press. The broader definition of censorship I provide in this book emphasizes the importance of institutionalizing and

[37] Byrnes, Nanette, "How the Bot-y Politic Influenced This Election," November 8, 2016. Available at: *MIT Technology Review* https://www.technologyreview.com/s/602817/how-the-bot-y-politic-influenced-this-election/. Epstein and Robertson (2015), Bond et al. (2012).

facilitating government transparency and competition between information distributors as well as producers in democracies so that what information is provided, at what speed and when, to the press and public is not completely the result of political motivations and strategy.

Citizens in democracies recently have been shown to be susceptible to flooding as well. Distractions and misinformation spread online by cheap Internet commentators or automated bots increase the burden on the public to separate the signal from the noise, and many confuse good and bad information.[38] Denial of service attacks that flood the websites of media, Internet companies, nongovernmental organizations, and government with too much traffic so that they become unavailable have the power to silence information channels selectively.[39] As soon as these strategies are used for political purposes, they become political censorship. Although much censorship research has focused on the Internet in autocracies, more research needs to be done to study how censorship extends to democratic environments on the Internet as these undoubtedly have important political impacts.

1.4 THE PLAN OF THE BOOK

I proceed by offering a theory of the strategic interplay between government censorship and citizens' consumption and production of information. First, I describe the incentives of the government—why it would choose to censor and the costs it might incur from censorship. Next, I develop a model of how both citizens and the media interact with information.

[38] Nyhan and Reifler (2010), Ratkiewicz et al. (2011, pg. 301–302).

[39] Woolf, Nicky, "DoS attack that disrupted internet was largest of its kind in history, experts say," *Guardian*, October 26, 2016. Available at: https://www.theguardian.com/technology/2016/oct/26/ddos-attack-dyn-mirai-botnet.

Using this model, I elucidate the three main ways in which censorship can influence the media and the public—fear, friction, and flooding. I then provide examples of each of these mechanisms in various communication media, and describe when each will have more or less impact on the spread of information. Fear, which is censorship based on deterrence, is by nature very constraining but must be observable in order to have an impact. Fear has to be credible in order to create deterrence; otherwise, it may instead draw attention to authoritarian weakness or create backlash. Therefore, it is discreetly targeted toward the most capable and motivated individuals. Friction, which imposes small taxes on information access, and flooding, which creates distractions, by contrast, do not need to be obviously driven by political entities to have an impact on information consumption and dissemination. Friction and flooding are more porous but less observable to the public than censorship using fear, and therefore are more effective with an impatient or uninterested public.

Chapter 3 provides an overview of the modern history of censorship in China and outlines the institutional structure and methods of censorship in China today. It describes how the Chinese censorship system has evolved from a model that was designed to micromanage every citizen's consumption and production of information to one that relies on porous censorship. It provides an overview of the main methods by which the Chinese government censors the Internet and the bureaucratic system that implements this censorship. Practically, it describes why China provides a good empirical test for the impact of porous censorship.

Chapter 4 explores how citizens react when they observe censorship online in China. Although many scholars have suggested that fear and self-censorship are the main forms of control of the Chinese Internet, I show that typical Internet users do not act afraid after experiencing online censorship and instead

are angered by observing it. Using a matched pair study of users who forward the same social media post, but where one experiences censorship and the other does not, I study how experience with censorship affects the writings of Internet users. I find that, all else being equal, those who have experienced censorship persist in writing about the censored topic and are more likely to complain about censorship, even as they become increasingly targeted with censorship. I then survey Internet users about how they would feel if they experienced censorship. I find that Internet users, particularly those who report having experienced censorship, are much more likely to report being unfazed or angry about censorship than fearful or worried. Last, using online experiments, I randomly assign users in a lab experiment to come across a censored webpage. I find that the observation of censorship creates more, not less, interest in the censored topic and also decreases support for government censorship policies. I explore how the Chinese government, likely aware that experience with censorship can undermine its reputation, adopts a two-pronged censorship strategy targeting high-profile users with fear-based censorship while attempting to make online censorship efforts less observable to the public.

Chapter 5 demonstrates that small, less observable frictions on information have a powerful influence on the online behavior of Chinese citizens. First, I analyze the spread of information about 120 self-immolation events in Tibet through social media in China. I find that the best predictor of the number of social media posts that accompany a self-immolation event is whether the event occurs on the weekend, when the censors are slower to censor, suggesting that the speed of censorship has important implications for the spread of information in China. Next, I estimate the effect of the Great Firewall on the behavior of citizens in China. Using surveys and direct measures of those evading censorship through data from the social media platform Twitter, I find that those who evade the Firewall are

technologically savvy, well-educated, high-income Internet users in China who have high levels of political efficacy. I find that the Firewall pulls this political elite away from their potential followers. I show that newly blocked websites have precipitous declines in usage directly following their block, showing how small impediments to access have an immediate impact on traffic from typical Chinese users. But I find that friction has an Achilles' heel, and is more commonly circumvented during crises and moments of sudden implementation.[40]

In chapter 6, I demonstrate that flooding in both online and traditional news media in China coordinates messages to distract the public from sensitive events. Using plagiarism detection software and leaked archives from the Chinese government to identify instances of flooding both online and in traditional news media, I show that the government uses propaganda to distract with coverage of the mundane details of Party meetings or with encouraging quotes and positive thoughts directed at the public.[41] Using estimates of search results for reposting of propaganda articles around the web, I show that for the most part this strategy is effective—highly coordinated propaganda used by the Chinese government is more likely than articles that are less coordinated to be re-shared in both the domestic and international social media spheres.

Chapter 7 concludes with a discussion of the implications of my findings for politics in both democracies and autocracies as information technology and social media become more central components of political communication. I lay out specific directions for future research in the area of censorship and discuss censorship's potential for long-term political impacts on domestic and international politics.

[40] This draws on work with William Hobbs; see Hobbs and Roberts (2016).

[41] This draws on work with Brandon Stewart, Jennifer Pan, and Gary King; see Roberts and Stewart (2016); King, Pan and Roberts (2017).