Risking Poison to Quench a Thirst:

Political Engagement Choices for Citizens and the State in China's Environmental Crisis

By

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For my father,

Joel J. Rabin

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LIST OF ABBREVIATIONS

CCP	Chinese Communist Party or the Communist Party of China
CES	Cadre Evaluation System
EPB	Environmental Protection Bureau
HEPS Survey	Health, Environmental Protection, and Society Survey
HRS	Household Registration System
MEP	Ministry of Environmental Protection of the People's Republic of China
NIMBY	Acronym for the phrase "not in my backyard;" describes an individual's opposition to development or environmental disruptions near one's residence or community, even if the individual accepts the need for such development or disruption generally.
NSR	Non-substantive response; includes both "I don't know" and a respondent indicating a refusal to answer.
$PM_{2.5}$	Airborne particles that measure less than 2.5 microns
SEPA	State Environmental Protection of the People's Republic of China
SNWTP	South-North Water Transfer Project

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This dissertation is, fundamentally, about justice. It started from my hope that both law and environmental policy can create just outcomes for the most vulnerable people: children, marginalized communities and those struggling against poverty. My dad, Joel Rabin, believed in just outcomes for the most vulnerable, and worked every day toward such ends. His belief shaped me, my choices and this dissertation. Eloquence far greater than mine cannot reach him where he has gone, and so I know these words mean little to him; luckily, he already knew what he meant to me. I therefore use this acknowledgement and dedication to tell just a few more people that he was here in the world, and how he mattered.

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ABSTRACT

In China, a deepening environmental crisis threatens health, livelihoods, economic development, and the future of the Chinese state. Water has grown toxic, crops fail, and the air is dangerous to breathe. Motivated by increasing social unrest and economic costs, the Chinese Communist Party has sought to reform and improve its environmental protection regime. Despite such efforts, conditions continue to worsen, particularly for those living in poorer rural communities who depend on the failing resources for basic subsistence, cannot escape pollution's effects, and have few to no options for remedy.

This dissertation is about how these villagers choose to act when faced with severe and immediate pollution, what shape that action takes, and what their choices reveal about the politics, policies, and institutions of environmental protection in China. Villagers who choose action risk significant political and economic consequences without much hope for success, and even if they win a lawsuit, participate in a protest, get the story into the media, or make their petitions heard, they may still face negative consequences. To understand the process through which such choices are made, I examine not only the choice to take visible action, but also the choices to act in less visible ways and not to act at all. I explore the boundary between action and inaction, and between different paths chosen. This boundary is significant to the CCP, which pays close attention to potential triggers of protest. It has implications for managing China's environmental damage, because environmental accountability is increasingly central to successful policies. Finally, understanding that boundary in China sheds light on how the most politically and economically marginalized can affect a durable authoritarian regime. By seeking to understand the choice process, I also find subtler dimensions of action that have significant

implications for public participation and how we understand environmental awareness more broadly. Before villagers are willing to even acknowledge pollution—no matter how obvious it may seem—each individual considers a variety of social and political factors to calculate the value of that acknowledgement. As such, the open acknowledgement of pollution can itself be an act of political contention.

I also examine how villagers' choices illustrate the state of institutional development in China, particularly the legal system. The legal system has been transformed and expanded to support economic growth, and now the CCP leadership increasingly seems to identify law as a tool to support environmental protection efforts. I explore the how the state's reforms affect individual perspectives, and what role they play in the choice to act. I find that connecting environmental protection policies to the legal system, whether through providing a channel for citizen suits, or through laws implemented to govern and enforce environmental policies, can have a dampening effect on levels of institutional and political trust, which has further implications for how social unrest might manifest.

1 INTRODUCTION

Cancer villages have become a well-known phenomenon.[1] Regular stories in international newspapers recount small children dying form lead exposure.[2] The Beijing Cough, caused by severe air pollution, is an expected cost of living long-term in Beijing, especially among the young and the elderly.[3] In March 2013, more than 16,000 dead pigs, floating downriver to Shanghai, further polluted drinking water for hundreds of thousands living along the Huangpu River tributary system.[4] The Yellow River, "cradle of Chinese civilization," no longer flows to the sea as a consequence of hydro-electric dams, pollution, desertification, and sediment build-up. These crises and the many others across China illustrate the limits to which the environment can be pressed. Over the last three decades, rapid economic expansion, industrialization, and steeply rising rates of consumption have caused significant damage, and are likely to cause a great deal more.

Without prospects for a near-term solution, China's environment is certain to degrade even further, a grim prospect for impoverished villagers and high-level party leaders alike, albeit for very different reasons. The villagers face immediate and inescapable environmental harm. Dependent on polluted water and toxic soil, they have no way out. As is often the case, people

[1] See, e.g., Kaiman (2013).

[2] See, e.g., LaFraniere (2011).

[3] See, e.g., Peplow (2014).

[4] Davison (2013).

and communities without political or economic power pay a disproportionate share of pollution's costs. In China, the poor and rural communities that supply the raw materials, energy, and agricultural produce to fuel the country also suffer the presence of coal plants, mining, and battery manufacturing operations, the most polluting industries in the world, in their backyards. The pollution impacts health and livelihoods, hitting harder among those most dependent on their environment for subsistence because they have no other choice. Without remediation, they will continue to suffer the effects because they cannot escape their environment, and for many, the damage is already done.

By contrast, party leaders can largely evade pollution's damaging effects in their daily lives, but they cannot evade the economic and political implications of a rapidly deteriorating environment. The resilience of the authoritarian state is dependent on the CCP's ability to manage popular discontent.[5] The demise of a sustainable environment cuts into that ability in two ways. First, the unprecedented economic expansion since 1978—the beginning of economic reform and opening up to the outside world (*gaige kaifang*)—has served an unspoken pact: economic opportunity in trade for civic participation and a political voice. In other words, the Party will lift China out of poverty in exchange for unchallenged rule. Without continued economic development, that pact falters, undermining the CCP's foundational power. Yet the economy has grown through untrammeled exploitation, consumption, and destruction of discrete and irreplaceable natural resources at an accelerating rate—a fundamentally unsustainable development model with a fast-approaching expiration date. Second, pollution has led to rising

[5] There are a variety of shapes this management takes; depending on the scale and perceived threat, the party leadership might choose to direct, suppress, co-opt or appease; see, e.g., Svolik (2012) for a detailed analysis of authoritarian states.

popular discontent, which also threatens the state's resilience. Over 180,000 mass incidents occurred in 2010 and pollution-related protests increased by 120% between 2010 and 2011 according to a report submitted to party leadership.[6] These protests, whether framed in "rightful rhetoric"[7] or not, represent the specter of large-scale mobilization against the government, a prospect the political elite fear may lead to their demise.

Any reform the state undertakes to remedy environmental damage must still balance the short-term certainty of economic development with the uncertain outcomes promised by fragmented environmental policy in the long-term. Despite the political danger from pollution-driven discontent, restricting economic opportunity is also risky. The CCP leadership has expressed commitment to curbing pollution and has undertaken a series of institutional and regulatory reforms. But wherever and whenever gains are made, a new wave of coal plants commence operation or ground for a new electronics recycling plant is broken, accelerating the rate of environmental destruction and the public clamor for clean air and water. While the state plans its way out of the minefield, trying to find an impossible political balance, the steepest costs are already being paid by those with no way out.

This project explores the choices poor, rural citizens make in response to severe and immediate environmental damage, and the political implications of those choices for citizens and for the state. Although isolated, and lacking economic and political power, these villagers are making choices that shape the course of environmental destruction and may change the course of

[6] Estimate by Sun Liping, professor of sociology at Tsinghua University, quoted in E. Wong (2012).

[7] "Rightful resistance" is a term developed by O'Brien (2006) to describe popular contention against a state whereby citizens frame their grievances within the institutions and rhetoric promoted by the state to make politically legitimate and non-adversarial.

the state. No matter how marginalized these villagers seem on an individual basis, together they constitute a population of 600 million—and the choices of 600 million individuals count.

Moreover, while their actions have an effect on pollution, institutional development, and social stability, how they arrive at the choice to act also matters. The villagers' choice to act or not to act, and form that action takes, depends on a wide range of variables, such as the perceived pollution source and villager expectations for government action. What risks do they consider? What incentives might be worth the risks? Exploring these questions requires that we look at why people choose not to act as well as assessing the variables that shape their choice. And because some combination of these risks and incentives lead to collective protests, the outcome most threatening to the political order, the choices of a poor villager from a far remote corner of some far distant place can have consequences for the elite powers in Beijing. Many of the CCP's policies aim to ensure that choice process leads away from protest, channeling discontent into controllable fora, such as the petition system, or the courts. The party has strongly promoted the legal system in particular as a tool to govern environmental issues and as a palatable option for those seeking remedy for environmental harm. Those who use the legal system for environmental remedy—now including specialized environmental courts—face similar challenges as those who seek other types of legal remedy, however: just outcomes are uncertain and the likelihood of retribution from more powerful players, such as business owners and local officials, in a dispute is high. As the environment has worsened, state leaders have increasingly employed regulatory mechanisms in environmental protection policies. The legal system is, however, unevenly developed and institutionalized, and provides a poor regulatory framework for environmental policy, resulting in very mixed outcomes. In some cases, not only do policies

fail to address the problems, but they cause other political or environmental problems, raising questions about China's capacity to construct and implement a cohesive, effective environmental governance regime.

In this chapter, I provide an overview of the dynamics of environmental challenges, institutional development and the politics and theories of villagers' decision making in China that lie within the scope of this project, the methodology used to conduct research, and the content of the chapters to follow. Because these questions lay at the intersection of political science, legal development, and environmental policy, I use similarly diverse literature and theories to develop and test my hypotheses. I also raise questions in all three disciplines that can speak to broader questions specific to each field. For example, what does access to and the development of China's legal system in the context of environmental damage say about legal institutional development in developing and non-democratic countries generally? Or what might the CCP's success and failures in controlling pollution say about future prospects for balancing short-term political control with long-term social welfare planning? And finally, what might it mean for the rest of the world if the CCP cannot control pollution output? These issues are significant—responses to the omnipresent "why does this research matter?" challenge that scholars must face; in point of fact, they matter quite a bit. This project is designed to yield some substantive answers, contributing to how we understand the voices of the marginalized in China's environmental crisis, and simultaneously to highlight the utility of viewing these questions through an interdisciplinary lens.

I. On Action and Inaction

This project started with an inquiry: would the expanded use of the legal system and other institutional pathways for seeking remedy reduce the likelihood that villagers facing severe pollution would turn to protest instead? Pollution is rampant in China's air, soil and water, and it is regularly cause for large protests—a major concern for an authoritarian government whose first priority is stability and maintenance of power.[8] Policies that channel social discontent away from uncontrollable fora into legal pathways or local governance solutions are therefore an important governing tool for the central government because they can reduce the prevalence of uncontrolled protest action.[9] At the same time, however, local governments remain motivated by the economic benchmarks generated and institutionalized as a metric for professional political advancement (Heberer & Trappel, 2013; Manion, 1985). The economic benefits of sustainable (and safe) development rarely manifest in the short term and, therefore, would not contribute positively toward cadre evaluation. Instead, even if the long-term outcome is positive, environmental protections tend to slow or stop short-term economic gains. Consequently, indirect incentives to support sustainable practices do not exist. For the rules about environmental protections that are explicit and direct, there is almost no oversight and no incentives. When inspections do occur, factories are often warned by the local officials

[8] The Chinese Communist Party's perceives large-scale protests as a threats to regime stability. This perception has been constant since the reform and opening up in 1978 (*gaige kaifang*) but became especially important for maintaining control following the Tiananmen Square students protests in 1989 (see, e.g., Prevention and Disposal of Mass Disturbances/Yu fang yu chu zhi qun ti xing shi jian dang zheng gan bu du ben: dang zheng gan bu yu fang yu chu zhi qun ti xing shi jian de li lun shou ce he shi zhan zhi nan, 1991). Research on China varies on protests' utility: government and business elites can use them to manipulate public sentiment instrumentally, such as strikes at Japanese factories on labor issues (Vekasi, 2014) or the anti-American protests following the bombing of the Chinese Embassy in Belgrade in 1999 (Weiss, 2013).

themselves and manage or shut down evidence of violations for the short time inspectors are on site. In one large region I visited, the local environmental protection bureau (EPB) has only one car, and villagers in the area know that seeing the car means water will be a little cleaner that day because the factories will reduce pollution output. The rules, and the incentives are increasing and being passed down from the central government in Beijing, but although local officials can get in trouble for flouting those rules if they get caught, reward for economic development is much more certain even if they prioritize short-term gains at the expense of those regulations.

Part of these new rules are institutional pathways that the government has identified as options for pursuing remedy. The expansion of legal institutions (such as specialized environmental courts) is one. Another is new regulations that make citizen suits possible in the general court system. However, because village leaders and local officials serve as gatekeepers to otherwise inaccessible routes, and there is strong incentivization to report only good outcomes or no outcomes in reports about environmental compliance, villagers have inconsistent access to what would hypothetically be pathways to remedy and often risk local coercion. Nevertheless, while some choose not to act, others pursue action nonetheless—and may go so far as to protest.

Research on China's environmental politics has largely focused on actions already taken and identified, tracing back to the contributing decisions or events *post hoc*. Given the significant risks of political and economic consequences for those otherwise without power, it is important to understand what led those who choose action to their course. Even if they win the suit, get the story into the media or their petitions are heard, the costs may exceed the benefits. To choose action despite these costs is therefore significant, and research that elucidates this choice contributes to understanding an important phenomenon. However, retrospective process-tracing

biases our data toward those actions we can capture, and tells us little about the stories of those who took action that led to a different outcome or about those who chose not to act at all. These paths, too, have something to tell us about the larger patterns of pollution-responsive action under political risk. We cannot trace the boundary between the commitment to action and the choice to remain silent by focusing only on those who have made their voices heard. This dissertation therefore also highlights patterns among those who are silent and shall remain so, those who have taken action and shall do so again, and all the many somewhere in-between. The goal here is to identify common threads that help us better to understand the boundary between action and inaction. This boundary is significant to the CCP, which pays very close attention to potential triggers of protest. It has implications for managing China's environmental damage, because environmental accountability is increasingly central to successful policies. Finally, understanding that boundary in China sheds light on how the most politically and economically marginalized can affect a durable authoritarian regime.

Incentives and disincentives drive both action and inaction. Some disincentives are readily observable: political repression, economic coercion, mixed messages from the leadership, the drive for economic development at the expense of the environment, and the uncertain outcome of any institutional or extra-institutional appeal. The incentives are less clear, however, and teasing out the relative weight they carry in the decision-making process is complex. The simplest answer is that the harm from pollution is so severe that people feel they have no other choice—it threatens their basic livelihoods or it irreparably damages their health and their children's health. While I found this to be true in my research, we still do not understand what separates one individual facing these harms who chooses to act from the one who chooses not to

act. Additionally, what factors lead one person to seek remedy or relief through government or government-sanctioned channels, and another to favor extra-institutional action? Access is obviously significant, but belief that a certain path leads to remedy also matters. How might such belief emerge? What might be the effect of new perceptions or experiences? Is it contingent on political context or a reflection of institutional performance?

II. THE ECONOMY PROBLEM

Simply put, the drive for economic growth limits the CCP's capacity and will to improve environmental governance in China. This policy trade-off is a global problem—evident among developed and developing states and democratic and non-democratic states alike. Although economic and environmental interests are not necessarily in direct conflict—indeed, long-term economic growth will be unsustainable unless the Chinese government is able to control, prevent, and mitigate environmental damage—many governments have had difficulty reconciling the short-term economic costs with the potential long-term benefits of effective and sustainable environmental management. In China, dependence on the quick sources of growth such as cheap energy and natural resource exploitation means that any efforts to protect the environment come at certain immediate costs and require a sea change in the economy's foundations.

The speed and breadth of China's economic expansion is unprecedented. This transformation, which started with Deng Xiaoping's first economic reforms in 1978, represents a historically anomalous development model. However, that development has depended on the rapid consumption and destruction of massive quantities of natural resources, some of which

irreplaceable and finite. Though not yet gone, many basic resources necessary to sustain the population are threatened. The growing scarcity of clean air and clean drinking water has major social, health, and financial costs, all of which are political liabilities. [10]

Many countries that have successfully implemented sustainable environmental protection policies already passed through their own environmental crises and industrialization periods to emerge on the other side. As they have modernized, shifting from goods to services, developing countries have become the primary suppliers for raw materials and goods. It has become an international chain of "not-in-my-backyard" (NIMBY) and China is, at present, a recipient backyard. Usable technology markets have exploded, driven by demand for products like smart phones. This demand has produced a corresponding spike in the rare earths' market, 97% of which China supplies. Mining rare earths is cheap—cheap labor and cheap extraction techniques with minimal regulation—and yields wide profit margins for the mining industry, but the environmental costs are astronomical. Mining run-off and wastewater carry heavy metals that severely pollute soil and groundwater, and processing discharges thorium into air and water.[11] Lax environmental governance has proven a comparative advantage in international markets, at least for Chinese companies. But in this case, and in many others, villagers pay the cost differential with their health and their livelihoods.

[10] See Chapter 2 for full analysis.

[11] The Guardian (2012)

III. Dissertation Design: Methods and Chapters

This dissertation uses environmental damage, with a focus on water pollution in freshwater lakes,[12] as a lens through which to evaluate political and legal studies questions. At the same time, environmental studies theories must also be included in the analysis as they help to clarify how information and incentives to act transform into political consequences. Because the questions I address in this project are interdisciplinary, the methods and theoretical framing must be diverse. I sought to maximize the interdisciplinary perspective through organizing the subsequent chapters around topical themes and patterns of the decision-making process that emerged during research and analysis. I used a combination of quantitative and qualitative methods to conduct research. This section lays out the overview of the dissertation's organization and research methods; for a full, in-depth explanation of methodology, please see Appendix A.

The research can be divided into three parts: qualitative, semi-structured interviews conducted among lakeshore communities in Yunnan Province; the Health, Environmental Protection, and Society (HEPS) Survey, a quantitative survey conducted in the provinces of Hubei, Jiangsu, and Yunnan; and archival research (electronic sources, newspapers, and statistical yearbooks).

[12] Chapter 2 explicates why water pollution in a surface body of water is central to the analysis.

Figure 1.1. Interview Lake Regions in Yunnan Province, China

A. Interviews in Yunnan's Lakeshore Communities

Yunnan presents a somewhat unique case for studying anthropogenic environmental change, its effect on the rural population, and how local government develops and implements

policies to address pollution within China. With some of the world's most biodiverse ecosystems, the province attracts international NGOs, many of which have sought to ensure the implementation and enforcement of effective environmental protective regulations. Yunnan's provincial government, in partner with NGOs and the central government, has encouraged the expansion of eco-tourism operations. Consequently, the province enjoys a high concentration of nationally protected areas and has stronger environmental regulation and oversight than other provinces. It is also the third poorest province in China, and has a large population of ethnic minorities—making the province an outlier on political and economic dimensions. However, although these features make Yunnan unsuitable for generalizability to other regions of China, they also mean Yunnan represents the best-case scenario in China's efforts to address the growing environmental crisis.

Freshwater shortages have become more and more common globally; in China, usable freshwater is disappearing at accelerating rates due to expanding industrialization and agriculture and increased consumption per capita (Economy, 2011; Ma, 2004). National surface water scarcities have led to overexploitation of unreplenishable groundwater sources: in some rural areas, the water table has dropped more than 40 meters since 1960 (Foster et al., 2004). Water scarcity poses challenges to social stability, geological stability, and economic development (Huang et al., 2006). In Hebei, for example, arable farmland has already decreased as a direct consequence of shrinking irrigation resources. Planting winter wheat on the northern plains of China is economically necessary for the local farmers, but requires up to 10 times the amount for irrigation that summer crops use. At current usage rates, the water table of the northern plains will be dry within 30 years. Although Yunnan consistently ranks among the five poorest

provinces per capita, it is also richest in water resources with more than 5,000 m^3 of water for each resident.[13] The lakes and river systems of Yunnan, however, reflect the national pressures on water resources. Once polluted past a certain threshold, Yunnan's lakes have struggled to recover. Of the nine Plateau Lakes, Xingyun, Dian, Yilong, Yangzong, Cheng and Qilu are all severely polluted, and Erhai is mildly polluted. Only Fuxian and Lugu are sufficiently clean and ecologically balanced, according to official evaluations, to be used for fishing and as a source of drinking water. The South-North Water Transfer Project, which is a pipeline designed to shift massive amounts of clean water from the southern provinces to the north, has further stressed the region's watersheds. Even in Yunnan, major droughts and increased water pollution are causing significant problems for the farmers that supply most of the domestic fruit and vegetable market.

The semi-structured interviews for this portion of research were conducted through site-intensive methods (Read 2010). I visited every village around five polluted plateau lakes in Yunnan (see Figure 1.1): Cheng Sea, Qilu Lake, Yilong Lake, Yangzong Sea, and Xingyun Lake. In these villages, I spoke with 3-5 individuals (sometimes in groups) in preliminary interviews. I then returned 2-4 times to 4-5 villages per lake and spoke with some of the same individuals I had identified on the preliminary round. As a result, I gathered data from 103 villages through preliminary interviews with approximately 200 villagers, and conducted serial interviews with 19 villagers from the five lakes. These villagers invited me into their homes and shared some extraordinary stories about their lives and their communities, not all of which can be included here.

Figure 1.2. Provincial Survey Sites, HEPS Survey

B. The Health, Environmental Protection, and Society Survey

The HEPS Survey was conducted in Hubei, Jiangsu, and Yunnan after the conclusion of the semi-structured interviews. The data gathered from the interviews and knowledge gained from the experience of speaking with villagers about their environment then informed questionnaire design strategy, topics, and language. Teams of enumerators surveyed approximately 300 respondents in each province, or 1091 respondents in total, of which 290 were village leaders (members of village committees) and 801 were villagers. The questionnaire

contained sections on five topics: biographical, environmental, health, social, and political. The questionnaire and survey approach underwent three pre-tests and rounds of revision before the full survey was conducted in February 2012.[14]

C. Chapter Overview

The following chapters are organized as follows. Chapter 2 focuses on the environmental crisis. Starting with a brief overview of China's environmental history, I identify patterns and policies that have contributed to the present conditions, such as the policy implementation gap, the space between the center's apparent policy targets and the local government's failure to implement. Rather than focusing on reasons for failure within China's political structure, I look at a problem inherent to environmental policy: uncertainty. Environmental policy struggles to address a wide range of unknowns specific to the dynamics of the environment, and must therefore compensate for uniquely high levels of uncertainty, essentially posing an information problem. Authoritarian states also have an information problem. Instead of the vast empirical unknowns characteristic of the environment, however, authoritarian states have a distortion problem. Thus environmental policies in an authoritarian state compound the informational issues. I construct an evaluative framework to assess how these magnified uncertainties play out.

Chapter 3 looks at the role of legal institutions, one of the CCP's environmental governance tools. China's legal system is highly developed in some sectors but poorly institutionalized in others. Previous research suggests that environmental law has the potential to

[14] The survey was designed and implemented with the cooperation of three Chinese universities and in collaboration with Professor Kerry Ratigan, then a fellow Ph.D. candidate in the Department of Political Science at the University of Wisconsin–Madison, and presently an assistant professor in the Department of Political Science at Amherst College, Amherst, Massachusetts. For the full discussion of the survey methods and instrument, please see Appendix A.

benefit legal development more broadly: as the state seeks to use the law to implement more effective policies, environmental legal improvements can benefit legal institutionalization overall. I pose two questions that seek to examine these dynamics and to clarify significant tensions produced by the current environmental governance arrangement at the state level and at the village level. First, how does the current legal framework work to promote environmental priorities? And second, how does the party's use of law as a tool to address environmental problems affect legal institutionalization in China overall? Macro-level research on environmental law in China—examining legal development from a comparative perspective, analyzing cross-sector features of legal institutionalization, and assessing national environmental law policy, for example—can partially address these questions. However, such a high-level focus on the formal legal sphere overlooks sociolegal factors that can alter legal norms, and hence, the local outcomes of environmental. Through accounts from those living along the shores of Yunnan's lakes, I explore how local communities perceive environmental policy outcomes and law's role. The data suggest that the use of China's compartmentalized legal system to enact its environmental policies has undermined the power, both of law and of environmental governance, to shape behavior. Consequently, the use of environmental law to implement policies may be undermining legal institutionalization.

Chapter 4 follows with an analysis of how villagers choose to speak about pollution, or why they might choose to remain silent, even when environmental change is immediate, evident, and severe. I use data from the qualitative interviews in Yunnan and the survey data from Hubei, Jiangsu, and Yunnan to identify common factors in the pollution-response process. The decision to act in rural China is the product of interaction among the harm, perceived sanctioned

pathways, an individual's sense of personal and relative power, and prospective negative and positive outcomes. In China, the designated political and regulatory space for public participation suffers from a reputation for poor usefulness and potential political risk for its users. As shown in Chapter 3, a legal sector such as environmental law can be vulnerable to political interference and cannot presently guarantee a low-risk space for systematic and effective public participation. If the space for participation is perceived as high-risk or high-cost, participation would require the presence of either compensatory incentives or an even higher perceived risk of inaction. This chapter builds upon the previous chapters by examining, from the villagers' perspective, what participation in environmental governance could mean, and how villagers balance environmental harm with political risks in pursuit of uncertain outcomes. What are the factors that shape villagers' responses to the environmental crisis? How do they perceive environmental risk and how do they integrate that risk with real and immediate economic and political hazards?

Chapter 5 explores the nature of political trust as in rural areas, evaluates the role it plays vis-à-vis institutional function within the context of environmental disputes, and examines the significance of trust for regime stability and legitimacy. Using the HEPS survey data and the qualitative data from Yunnan's lakeshore communities, I find that that trust in the center interacts in a fragmented and contradictory way with perceived institutional performance. Furthermore, I find that negative perceptions of the legal system are associated with low political trust in government, local and central, and an increased willingness to engage in protests, demonstrations and sit-ins. Trust in the center does not appear to inhibit villagers' expressed willingness to protest in the future; moreover, it is associated with increased likelihood to engage in protests among villagers who also distrust local government and institutions. As argued in

Chapter 2, improving environmental policy and governance hinges on regulatory structures that are systematized and institutionalized. If legal institutionalization stalls or degenerates, it will significantly affect environmental governance outcomes.

Chapter 6 then concludes with an overview of the main arguments of this dissertation, an assessment of additional directions for inquiry, and a review of the implications this research has for the environment—within and beyond China's borders.

IV. Contributions to Current Research

Situated at the intersection of political science, legal studies, and environmental policy, this project is designed to make methodological and substantive contributions across all three disciplines. Gathering data to answer interdisciplinary questions depends on a variety of methodological and analytical approaches. As such, the project makes a methodological contribution by demonstrating the value of broader theoretical and empirical grounding across disciplines.

Chinese politics, environmental governance, and the role of law are, together, an increasingly central topic of discussion among policy makers. Boundaries erected between political science and sociolegal studies, however, undermine potential contributions to policy and public debate; although there are many insightful scholars that do bridge the gap, law and politics are natural companions and there should be no gap at all. The threshold that separates environmental science and policy theory tends to be knowledge-based: even in the United States, debates about *malum prohibitum* violations require understanding the science behind the

regulations.[15] But given how important environment policy has become, policy makers need input from scholars who understand the context, politics, and potential of governing tools, especially regulatory institutions. A more convincing story can be told to a much broader audience when we recognize that human and institutional behaviors are not governed by the limits we place on academic disciplines.

Legal studies research in China is diverse, very rich, and somewhat fragmented, qualities that reflect the legal system itself. In only 30 years, Mao's legal nihilism has given way to a broad, complex system of (somewhat functional) laws and regulations (Lubman, 1999; Peerenboom, 2002). Legal institutionalization is highly uneven, however, exhibiting different levels of development across different areas of law and legal institutions. Consequently, it is problematic to make sweeping generalizations on how the law works, to whom it applies, and whether laws can or should be enforced (McElwee, 2011). Current literature nevertheless speaks to increased legal institutionalization (Chen et al., 2002; Peerenboom, 2002; Zhao, 2006), a gradually improving court system (Gao, 2010; Landry, 2008; Liebman, 2007), and shifting roles for law combined with increased promulgation of formal rules (Cai & Yang, 2005; Chen, 2007; Tanner, 1999).

Viewing law from the top down and the bottom up through the politics of environmental legal reform does not replace the conclusions drawn from research about other areas of law.

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[15] There is a continuous push and pull over the authority of agencies to set specific benchmarks to govern pollution within the framing of the original legislation. *Malum prohibitum* means that a violation of rules of regulations is ascribed a negative value specifically because it was a violation and not because it was intrinsically bad (as opposed to *malum in se* which refers to violations or crimes that are against the law and against society's moral code, such as murder). Often, environmental science is speculative or based upon modeling for lack of the ability to control for variables that may not yet even have been identified. Consequently, an agency or ministry might set limits at one point only to then be challenged to justify those limits. Courts, lawyers and other legal actors must therefore acquire specialized knowledge to engage with the issues.

Instead, it contributes an additional perspective. Although there has been thorough research on environmental law in China, the focus tends to be relatively narrow. As discussed earlier in this chapter, such research is already limited to cases at the narrow point of the dispute pyramid (see, e.g., Stern, 2014). In-depth, ethnographic case studies of environmental disputes within communities also contribute to our understanding of the interlocking roles of law, politics and environmental governance, but limit generalizability (see, e.g., van Rooij, 2006), and once again, examine the framing of disputes retrospectively. In other areas of sociolegal studies, there is greater methodological variation, especially outside of China in less restrictive research environments. Within China, there are very few examples of surveys that address the role of law in politics, politics in law, and offer insight on legal institutionalization from the perspective of Chinese citizens. Of those—Landry (2006), Gallagher (2006 & 2010) and Michaelson (2002 & 2010)—none examine environmental law. Because of pollution's political salience, environmental legal policies and where they fit into the awareness of those most directly affected, must be given due regard. Villagers not only have no margin for the destruction of their livelihoods, they also have no way to evade or cure pollution's detrimental effects on health. This also means that the longer it takes for CCP leadership to formulate and implement policies that force back the headlong speed toward environmental destruction, the more whole communities will be irreparably damaged—more and more people with nothing to lose from the political risk of protests. I synthesize the broader, large-n study with data from semi-structured interviews, for which I was able to first identify a clear, observable, direct and consistent harm (lake water pollution)—whether action had been taken or not—and thus capture the process of decision-making leading up to action or inaction. In other words, failure to acknowledge

pollution was an indicator of politics and internal assessment, rather than a consequence of education or other knowledge.

My project makes three contributions to research on environmental policy. First, research on whether law can be the appropriate tool to remediate or control pollution remains rare despite the apparent dependence of the CCP on the legal system as a tool to monitor and control pollution, and this project evaluates law's potential to function as that tool in a restrictive political environment. Second, the project explores how villagers take responsibility or assign blame when identifying pollution. Environmental policies in the United States and in China both depend on citizens to play a role in oversight and enforcement, although China's version is far narrower. Data from the field indicate that the political environment can completely supersede objective reporting, limiting even further the potential utility of citizen participation in environmental governance. Third, though the uncertainty synthesis in the next chapter, I show how political theory and environmental policy theory have a great deal to offer each other, and that greater cross-discipline engagement could yield benefits for the highly pressing environmental issues we now face.

V. Aspirations and Limits

One way to understand what drives villagers to take action and shapes the choices they make is to seek out those who have already acted, rather than survey those who have not and may never choose to do so. After all, having taken some form of action does not preclude future acts, and at least then their decision processes led to certain outcomes. I chose not to take such an approach, however, for two significant reasons. First, a retrospective account of a personal

thought process, without any way to confirm the accuracy of that account, is highly likely to be biased, especially under politically restrictive conditions. Taking politically sensitive action often means reluctance to being exposed even after action has occurred. When there is collective action, it is not always clear where the action began. In addition, if the government has responded to a sanctioned or unsanctioned action, both the government and those involved have incentives not to allow further pursuit or research by external parties. I came across one account of such intransigence through contacts at an international NGO. The NGO had partnered with a university to conduct research into contaminated soil. The government was aware of this partnership, but there remained some question as to the ethics of how the information about the contamination was being handled—whether the villagers who had first noticed a problem and sought help from the local university fully understood that the levels of contamination were far worse than previously expected and an immediate danger to health. The NGO hoped to have the opportunity to eventually help the villagers and provide the information to them. The NGO was not permitted to do so, however, and appeared to be reluctant to challenge the government in order to ensure future cooperation. Meanwhile, the government officials were not enthusiastic about the NGO's involvement in the first place.

The second reason not to focus on actions already taken is because this project seeks to explore what differentiates action-takers from non-action-takers. There is already excellent research that explores the process of action once the decision has been made.[16] This project takes one step back, before any commitment to action. This earlier focus is fundamentally important,

[16] See, e.g., Rachel Stern (2013), Li Lianjiang and Kevin O'Brien (2003), Mary Gallagher (2006), and Ethan Michelson (2007; 2010), among others, have explored grievance procedures, legal battles and the mobilization of protests.

based on what we understand about legal institutional development, environmental politics, and social stability in Chinese politics. The process of decision making hinges on the belief that either there is no choice or that one choice is superior to another. Even the acknowledgement of pollution is a form of action and can be contingent on the belief that speaking out has value. This means that the interaction among assessment of risk, value, and margin of choice occurs even before villagers choose to name the problem they face.

Though my dissertation represents one effort toward improving our understanding of this framing process, it is only one effort. It is a challenging task, and I am contributing to it but not completing it. I hope additional scholarship expands the start I have made in the following chapters. Despite the seeming powerlessness of villagers, individually and as communities, pollution's threat to health and home incentivizes civil disobedience on a scale that could dictate China's future prospects for stability and (perhaps) for political liberalization. Certainly the environment is a public good that will be destroyed without a stronger commitment or a better set of policy tools from government, certainly to be driven in part by a critical mass of citizens pushing for reform. In the restrictive political environment, citizens may only reach that critical mass if they see no other solution than to risk punishment or institutional failure. This returns us to the question of personal assessment: how do villagers, largely politically and economically powerless as individuals, choose to act when faced with severe pollution?

2 DOES THE WAY DICTATE A WILL?

CHINA'S ENVIRONMENTAL CRISIS AND THE POLICY IMPLICATIONS OF UNCERTAINTY

I. INTRODUCTION

There is a rusted sign standing beside an ornate stone gate in Hukou[17] where the village waterway meets the lake, reminding villagers and visitors to "Save Xingyun Lake." The waterway itself is choked with algae and sewage, and Xingyun's waters are so poisoned with chemicals that they are unsafe even for industrial use, let alone fishing or agricultural irrigation. In that village on the lakeshore, residents fish in the lake and irrigate crops with lake water because they have no other choice. When asked about the pollution, some simply shrug, while some recount problems with crops, or speak of neighbors dying from cancer. Pollution has caused these things, they say. But what can be done?

This question, writ large, gets at the fundamental uncertainties that thwart policy design and implementation aimed at addressing severe environmental damage: not only what can be done, but also what will be done, and will it be enough? China's environment is in crisis.[18] Anthropogenic pollution from energy production, agriculture, mining and waste is severe and

[17] Village and individual names have been changed.

[18] The definitions for "environmental crisis" vary broadly. According to Taylor (2009), an environmental crisis is "the dramatic, largely unexpected, and irreversible worsening of the environment leading to significant [resource and population] losses [or extinctions]" (2009:9). These three central features—largely unexpected, irreversible damage, and significant loss—simultaneously create a high definitional threshold while also speaking to the uncertainty evident in the qualifiers. What does "largely" unexpected mean, and to whom? Can we anticipate "irreversible?" And "significant" loss according to what measure? (Taylor, 2009)

widespread in the air, water and soil. The Ministry of Environmental Protection and the Ministry of Land and Resources estimate that 19% of farmland is impregnated with poisonous heavy metals, including cadmium, nickel and arsenic; 60% of ground water, and 39% of surface water, is too polluted for human consumption and air pollution in urban areas "did not give cause for optimism."[19] Natural resources are disappearing, from both consumption and destruction. Environmental stress from both is overwhelming ecological mechanisms that would help to absorb some of the damage. The scale and speed of these processes are accelerated by a population of 1.36 billion. In many areas, pollution and other stresses have caused fundamental ecological changes. Some of these changes may be reversible or returned to a stable equilibrium, while others, such as the extinction of critical species, could trigger ecological avalanches[20] with broad and unpredictable consequences that could further deepen the crisis. Pollution and other environmental stressors also damage human health and livelihoods, as voiced by the villagers in Hukou, and incur other economic costs, such as dwindling water supply and increasingly scarce raw materials. The growing popular discontent poses a threat to social stability and the CCP's political hold, and creates significant incentive for the state to control and reverse the damage. Nevertheless, while there have been some small successes, most of the environmental policies seem to make little difference; pollution continues, seemingly unabated, and the environment continues to deteriorate overall.

[19] The data in the State of the Environment Report 2013 regarding air quality include a wide range of factors and pollutants (State of the Environment, 2014).

[20] Ecological avalanche is a disciplinary term, meaning that an ecosystem destabilized to a critical degree will trigger an avalanche of additional ecological changes and potential extinctions.

This failure to effectively address the environmental crisis could be due to a lack of will on the part of the CCP leadership, poor policy formulation and implementation, the uncertainty of environmental science, or, almost certainly, a combination of the three. The CCP leadership has acknowledged the harm and the costs and voiced commitment addressing the crisis—last year, Premier Li Keqiang declared the party's "war on pollution" and promised a commitment to environmental protection efforts on par with the party's commitment to poverty reduction[21]—and implemented policies designed to slow pollution rates and protect natural resources across a range of sectors. For example, the state has developed clean energy sources including solar and wind to reduce coal dependence, directed significant financial resources toward remediating lake pollution and deforestation, and has cracked down on polluting firms, enforcing closures and even occasionally bringing criminal charges against factory officials. But economic development and political control appear to remain the highest priorities, and thus the leadership will not enforce environmental protection measures that appear to be at the cost of economic interests or the supremacy of the CCP's authority.

Those outside the CCP leadership's confidence can only speculate on the commitment (or lack thereof) to addressing the environmental crisis or make an approximation based on rhetoric and state actions. The policy problems, however, are more readily evident. While some environmental protection policies do produce some of their intended outcomes, many are poorly informed, incoherently or ambiguously designed, incompatible with environmental and political conditions, and/or inconsistently applied and enforced. In addition, policy evaluation

[21] Xinhua (2014)

mechanisms are sometimes biased or omitted, so that policy revisions or new policies rarely benefit from analyses of previous policy strengths and weaknesses. These problems are not unique to China—the environmental policy process has an unusually high number of uncertain variables that hamper policy effectiveness across the board. Environmental science has only revealed a fraction of the biological, chemical, and ecological dynamics at play when human behavior affects the environment, leaving a broad swath of uncertainty for which environmental policies must already compensate. Identifying the causes and effects of environmental problems, designing policies for human behavior that anticipate potential environmental outcomes, and balancing human interests with amorphous and subjective environmental values are always and everywhere undertaken with incomplete information. However, in China, there are institutional and political factors, such as decentralization, the regulatory framework's unreliability, and the information falsification problem common to repressive regimes that magnify uncertainty and thus exacerbate the policy problems. While there is little the CCP can do about environmental uncertainty per se, policies could potentially be improved by addressing these other factors.

The chapter proceeds as follows. In Section II, I discuss the historical legacies that contributed to the environmental crisis. In Section III, I review some of the more recent environmental policies, and discuss the policy implementation gap. In Section IV, I construct an evaluative framework to disaggregate informational uncertainties within the policy process, and then identify institutional features within China that magnify the degree of uncertainty. Then, in Section V, I discuss the role of public participation in environmental policy theory, how it might serve to mitigate uncertainty problems, and where the CCP has sought to facilitate participation. I conclude in Section VI with a description of how China's prospective environmental

governance choices relate to the focus of each subsequent chapter: villager participation and feedback, legal institutions, political trust, and institutional confidence.

II. Historical Legacies

The poor condition of China's environment has many causes. While much of the damage can be attributed to current policies and practices, that damage is, to some extent, the end result of centuries of environmental stress from human activity. The Yellow River, China's second longest river, is widely regarded as the "cradle of Chinese civilization," because there have been continuous human settlements for thousands of years in the region. The Xia and Shang Dynasties, China's first, originated among the clans who claimed territory across the river basin (Elvin, 2008). The river's eponymous color derives from the yellow sediment that it carries downstream at a higher rate than any other river in the world (Elvin, 2008). As land became scarce, and the population grew, people siphoned off or redirected tributaries, removed trees and brush from the surrounding slopes, and constructed barriers along the banks. Over time, the river's water volume diminished, while erosion and sedimentation increased. The flow rates subsequently decreased, causing the sediment to settle to the bottom of the riverbed rather than being washed downriver. Sudden flow increases from rains or rapidly melting snows forced settled sediment forced the water upwards and beyond the banks, causing catastrophic flooding. Dykes and supports, made initially from packed earth and later from concrete, were constructed to prevent additional flooding and control the river's course changes. These modifications, however, also blocked the remaining tributaries and rainwater that previously fed the river, further decreasing the flow and causing additional sedimentation. By the 1990s, the restrictions

to the river's flow and volume periodically caused it to fail to reach the sea, and sediment deposits raised the riverbed up to ten meters above the surrounding land (Ma, 2003; National Geographic 2010). The low- or no-flow periods now compound the pollution problem in the river basin. Rather than washing pollution to the sea, the river carries pollutants downstream, away from the polluters but into other population centers. Most of the pollution will eventually settle to the riverbed, leaching into the water table through the surrounding soil.

Population density tends to be higher along rivers and large lakes, which provide a dependable source of water for drinking, fishing, and cultivation as well as easy access to other communities. The rivers and lakes also provide a convenient receptacle for waste, both human waste and industrial byproducts. Although human communities have bordered these bodies of water throughout history, China's recent population growth and economic expansion have increased the human stresses placed on the local ecosystems. Some high-volume lakes have ecologies that can break down particular waste products and dilute the remainder to undetectable levels as long as they are not already oversaturated or overloaded. Water currents may shift the remaining pollutants to other areas of the lake. High-volume rivers can carry large amounts of waste downstream, putatively away from population centers and into the oceans to be diluted and broken down, as long as they have a sufficiently swift flow rate[22] (Greer, 2014). In these ways, polluters may be ignorant of the costs of their own destructive practices. But over time, heavy pollution loads combined with the low water levels in lakes and rivers, cumulative effects of

[22] Disposing of waste into the water system is not sustainable in the long-term, even if it is small loads discharged into the oceans. Certain waste products include elements, compounds or microorganisms that can disrupt aquatic environments even in small amounts, either because they cannot be broken down and are toxic, e.g., arsenic and lead, or because they can infect and kill endemic organisms, e.g., some bacteria and viruses.

human activity and use, increase water scarcity, and incapacitate the adaptation mechanisms in the ecosystems. As a result, surface water has become so polluted in many lakes and rivers that the state has rated 39% of them as unsafe for any human contact (Ministry of Environmental Protection 2015).

By the beginning of the 20th century, the cumulative stress on the environment had slowed the flows of several of Asia's great rivers, leached nutrients from large areas of farmland, contributed to desertification and, through over-farming, overgrazing and deforestation, transformed the Loess Plateau from a fertile breadbasket to a wasteland stretching 640,000km^2. Even so, damage was largely incidental and uncoordinated. This changed after 1949, when the CCP founded the People's Republic of China, and Mao Zedong and ruled essentially unchallenged until his death in 1976.

Mao believed the environment was an adversary to be subdued by communism—"Man must conquer Nature!"—and many of his policies directly and indirectly caused massive environmental destruction (Shapiro 2001). Convinced that the natural environment could be completely subjugated to his vision of communist ideals, he set in motion nation-wide economic policies that had very little scientific basis. Many of these policies led to environmental disasters and almost always demanded a high human cost. The agricultural and manufacturing practices promoted during the Great Leap Forward, for example, caused massive deforestation, floods, and famines. This national campaign was intended to rapidly transform China's agrarian economy into an industrialized communist society, and was executed through a variety of quotas, policies, and absolute directives (Saich 2004). The transformation required the PRC to attain higher grain yields on less land and with less labor, so the state mandated adherence to a long list of unusual

changes to farming methods. These methods included the rapid construction of new irrigation systems, the slaughter of any wild birds that might eat crop seeds, and the in-fill of wetlands to increase tillable land. Instead of increasing yield, however, these changes resulted in a 15% decrease in the first year and 30% in the second. The new irrigation systems failed, and crops died from lack of water. With no wetlands to absorb and redistribute excess water flows from normal precipitation, devastating floods occurred. Furthermore, the dykes had been weakened by the construction of the new irrigation systems; intended to contain floods, the dykes collapsed and the floodwaters poured over the countryside, killing people and livestock, damaging buildings and washing out more crops. The bird kill-off left an insufficient number of predators to keep the insect population low, and the sudden increase in locusts led to more agricultural damage. When the state implemented unreasonably high steel production quotas to speed up the industrialization process, individual families built their own smelters and melted down all sorts of household and farming implements to meet the quotas. However, these metal tools were not the right combination of metals and other elements, so the steel produced in this process was poor quality, while leaving many families without household items or farming tools. Furthermore, the widescale construction of "backyard furnaces" and the large quantities of coal required for the smelting process caused massive deforestation and air pollution (Shapiro, 2001).

Following Mao's death in 1976, Deng Xiaoping assumed primary substantive leadership. Deng initiated the Reform and Opening policy, a comprehensive institutional and ideological restructuring, in 1978, laying the groundwork for China's rapid economic development and modernization over the next three decades. Although Deng did not espouse the same antagonism for the natural world as Mao had done, many of the structures and policies put into place under

his leadership were solely focused on economic expansion without regard for the environmental cost and created the demand for resources to support such a rapid expansion. These reforms set up an explicit conflict between economic development and environmental sustainability that continues to undermine environmental protection at present. Under Deng, the party's political evaluation system, also known as the Cadre Evaluation System (CES), was reformed to incentivize measurable short-term economic development. The CES, a feature of CCP party control, dictates the assessment procedure and performance indicators that are used to determine promotion and demotion of government officials within the party. Before the Cultural Revolution, there was a clearly defined hierarchy of positions, responsibility and rank. Initial appointments and assignment changes were determined at all levels by those in the highest party ranks through evaluation of political and technical performance (Manion 1985). During and after the Cultural Revolution, however, the system was demolished and incumbent officials were removed from their positions. Political ideological fervor and personal loyalty superseded performance-based criteria. In the post-Mao period, Deng identified the "unsuitable organizational and personnel system" as a major problem (Deng, 1987). The new CES was characterized by economic performance evaluation criteria, decentralized evaluation authority, and greater transparency (within the party) to inhibit the influence of more subjective judgments. The emphasis on economic performance—annual growth rates, fixed assets, and profit margins—significantly disincentivized environmental policy implementation at the local level.

The Household Responsibility System (HRS), which de-collectivized Mao's farming communes, has produced mixed environmental effects. Under Mao, communal land ownership and arbitrary quotas undermined sustainable land management practices. HRS reform occurred

in stages between 1979 and 1984. In contrast to the strict communist model, in which the state owns all land and all production, and China's version of the communist model, in which collectives managed agricultural production while the state owned the land, the HRS allowed individual households to exercise control of profits and costs from their yield. Limited-term land-use rights and leases allowed farmers to plan beyond the next harvest, and to invest in new equipment. This reduced the marginal cost of higher quality infrastructure and increased the value of such practices as crop rotation and cooperative labor. In many areas, local officials were allowed to determine the degree and nature of cooperation among farmers under their authority, creating diversity among local management systems. Unfortunately, while longer time horizons for agriculture and other economic activities moderately reduced environmental damage, competition among local officials and a lack of incentive to collectively manage resources that cross farming cooperative boundaries, has exacerbated environmental damage overall.

III. What Can Be Done or What Will Be Done: The Problems with Policy

China's unprecedented economic expansion over the last three decades has been extraordinary, with economic growth averaging 10% annually since 1990 (Economics, 2015). The environment has paid a steep price for such rapid growth, though. .. Industrialization, a cheap manufacturing labor market, and the extraction and exportation of raw materials are all components of China's economic development model, and are all contributing to environmental destruction. These problems are compounded by China's massive population. Although the One-Child Policy may have done more to pre-empt environmental harm than any other single national

policy at any time by restricting population growth,[23] 1.37 billion people are enough to badly exacerbate the environmental costs of economic development. The new wealth and new access to markets following years of deprivation has contributed to a widespread appetite for consumption of goods, services, and energy. Over time, economic development's benefits lead to even more environmentally disruptive behavior. For example, increased energy consumption leads to air pollution and deforestation from coal-burning plants, but it has also been the incentive for massive infrastructure projects (Ma 2008). The Three Gorges Dam, initiated in 1994, could not have been built when it was originally proposed in 1919 by Sun Yat-sen, and it proved beyond the CCP's means in the 1950s, despite strong support from Mao. By 1994, though, the CCP had the resources and technology to proceed. Its construction forced more than 1.3 million people to relocate (most without reasonable compensation), increased the rates of waterborne diseases and earthquakes,[24] generated severe landslides, and threatened the biodiversity unique to that region (Hvistendahl 2008).

Economic development and its resultant environmental costs are products of state policies and governance strategies; as economic growth has slowed, and the environmental consequences have grown more evident, the CCP leadership has signaled shifting priorities through a variety of policy measures, institutional adjustments, and rhetoric that promotes environmental protection values. In 2008, the State Environmental Protection Agency (SEPA) was upgraded to the Ministry of Environmental Protection (MEP). This shift improved inter-

[23] Dickie (2008) estimates that without the One-Child Policy, the population would exceed 1.7 billion, a net difference of 400 million people.

[24] The Three Gorges Dam potentially aggravated the conditions that produced the May 2008 earthquake in Sichuan (Naik & Oster 2009). There is clear evidence that dams and intense mining operations increase the rates of seismic activity.

ministerial coordination and collaboration and increased MEP officials' political clout to push back when conflicts of interest arose between environmental protection and other priorities. The 12th Five-Year Plan in 2010 addressed environmental protection directly, and specified benchmarks for reforestation, fuel and water consumption, and emissions, while earmarking more than 5 trillion yuan--US$817 billion--to be invested in environmental protection over the 2011-2015 period.[25] Spending on general environmental protection measures has continued to increase steadily, with 603 billion yuan in 2011, 825 billion yuan in 2012, and approximately 1 trillion yuan in 2013. An air pollution prevention and control action plan made public in September 2013 included a 1.7 trillion yuan in investment.[26] The Air Pollution Law (2015) has been revised to include pollution prevention measures, specify monitoring standards, and cover a wider range of violations. Construction and development projects may require environmental impact assessments, designed to provide information to local residents and government officials about potential environmental impacts. The State Council has announced targets for improving water quality in an Action Plan for Water Pollution Prevention: over the next 15 years t75% of the water in seven major watersheds and 95% of water from drinking water sources in major urban centers are supposed to meet specified standards.

These are only a few examples of the plethora of environmental protection measures instituted by the state. The sheer number and variety of policies and mechanisms that address

[25] "China unveils 12th Five-Year Plan." CNTV. October 28, 2010, available at http://english.cntv.cn/program/china24/20101028/100670.shtml.

[26] For reference 808.23billion was invested in defense, and public security received 205 billion yuan 2014. Report, Chinese Vice Minister of Environmental Protection Wu Xiaoqing and other senior officials from the Ministry of Environmental Protection give a press conference for the second session of China's 12th National People's Congress on environment protection, in Beijing, capital of China, March 8, 2014.

environmental concerns is impressive. Yet, though some policies have proven successful, many more have produced mixed results, and many have failed entirely. A broad view of environmental governance in China reveals systemic problems with policy formulation, implementation, and enforcement (Lo and Tang, 2006; Van Rooij, 2006; Mol, 2009). Overall, there is considerable evidence that the state continues to struggle with conflicting priorities. The South-North Water Transfer Project (SNWTP) clearly illustrates these tensions. In order to address water scarcity and desertification in northern China (caused by waste and pollution), the central government decided to undertake what has become one of the world's largest construction projects. The SNWTP is designed to transfer approximately 45 billion cubic meters of water each year from southern to northern China (Moore 2014). Not only will diverting the water cause problems in the south, the course of the three canals requires relocation of 300,000–350,000 people. It does not solve the waste and pollution problems, and it is very costly, some US$63 billion. While the Western Canal has been delayed indefinitely by construction problems, political infighting and rising costs, both Eastern and Central Canals are almost complete. Initially, political issues caused construction delays also, but Beijing reasserted party unity through a combination of coercion, rewards, and bargaining, and pushed construction forward (Moore, 2014).

The SNWTP shows how, rather than seeking to resolve an environmental problem by addressing the causes, the CCP has invested in solving the immediate short-term consequences, and shifted the costs to others, creating different problems in a shell game of policies. One can observe this same strategy in action as the CCP faces the severe air pollution problem, and the political fallout. In cities shrouded by poisoned air, the party leadership must address rising

popular discontent. Hazardous levels of $PM_{2.5}$, airborne particulates composed of heavy metals and toxic organic compounds smaller than 2.5 microns, cause an estimated 1.6 million deaths a year in China, or 4,000 deaths a day, which represents 17% of all deaths in China annually (Rohde & Muller, 2015). Because they are so small, these particulates cannot be expelled once they are inhaled, and the damage is cumulative. Consequently, the CCP has been under growing pressure to remedy the problem. . One solution has been to close coal plants, which produce energy cheaply but cause significant air pollution, including $PM_{2.5}$ The state has then replaced the energy shortfall with gas, a cleaner energy to consume. Unfortunately, cleaner to consume does not mean cleaner to produce, especially if the gas is produced by burning coal anyway. Last year, for example, the government constructed 50 new coal gasification plants in rural areas in China's interior provinces while shutting down urban coal plants to clean up the air in the cities (Denyer, 2015). Turning coal into gas means energy sources can be transported over long distances, but each plant produces four times as much carbon dioxide (CO_2) as one traditional coal-burning plant, contributing to climate change. There are also steep local environmental costs as production pollutes the air, water and soil. These plants are therefore being sited away from cities to poorer, less densely populated areas that possess coal reserves rendered suddenly more profitable. Because of weather patterns and other environmental factors, air pollution travels, so it is not clear that shutting down coal plants near cities and shifting energy consumption to cleaner gas can reduce pollution levels in those cities at all. At the same time, the state has not actually improved environmental quality overall, even if the air does improve in urban regions, as it still damages the rural environment, further limits already scarce water resources, and adds to the greenhouse gases that drive climate change.

The leadership's willingness to make foundational changes to the party and state governance structures, as it has done by upgrading the MEP, should be encouraging. Unfortunately, these changes are largely uncoordinated or limited in scope. Such inconsistencies are made manifest.in the confused and conflicting environmental regulatory system. Environmental laws and regulations have increased exponentially, and include protections and opportunities for non-state actors to pursue remedy for environmental harm. Environmental suits are on the rise. Yet although the environmental sector of the legal system has been significantly expanded, the laws and regulations are poorly designed, inconsistently implemented, and only partially enforced. Between 2007 and 2013, 130 specialized environmental courts were opened in several provinces, but many of these courts suffer from a shortage of cases, whereas others have a larger caseload, but the cases are predominantly minor cases brought against rural and often poor individuals rather than high-impact polluters (Stern, 2014).

Scholars proffer two main arguments to account for the contradictory and ineffective environmental governance regime. One suggests that central-local government relations are to blame for the policy implementation gap and the disconnect between the CCP's stated goals and the functional results (Kostka, 2014). In one version of this argument, the center is truly committed to improving environmental protection measures, but such good intentions are thwarted by local officials, who prefer to prioritize short-term economic gains (Eaton & Kostka, 2014; Economy, 2011). In another version, the center's commitment is largely rhetorical, and it does not provide the local governments with the necessary tools and resources to execute policies (Dickson, 2011; Van Rooij, 2006). The other argument focuses not on center-local relations per se, but on the capacity and willingness of the center to solve the disconnect between state levels,

suggesting that the center insufficiently incentives local officials to implement policies promulgated at the national level (He, Lu, Mol, & Beckers, 2012; Ran, 2013). This argument suggests the *nomenklatura* system and the CES, which shape appointments, positions and promotions within the CCP, could be used to alter the incentives, but the leadership has not yet done so.[27] Although the party has added more environmental targets to the evaluation in the last few years, they are less heavily weighted in the evaluation overall than the economic targets.[28] They are also based on more ambiguous measures and or longer-term processes, making them more difficult to assess, especially when compared to short-term, concrete and business-friendly economic thresholds. Additionally, environmental and economic objectives often can seem to conflict, so not only are the environmental targets less important in the evaluation, but meeting the environmental protection targets might directly prevent meeting the economic targets (H. Li & Zhou, 2005). Thus adding environmental protection to the evaluation criteria does not indicate the leadership is committed to changing the incentive structure in favor of improved environmental protection efforts (Ran, 2013).

IV. Environmental Policy and Uncertainty

China's environmental governance regime is plainly fragmented, and as a whole, largely ineffective at preventing further environmental deterioration. To be sure, environmental policies

[27] The *nomenklatura* system dictates the number, hierarchy and responsibilities of party positions and identifies the qualified party members for each position (see e.g., Manion 1985, Burns 1994). The CES incentivizes party member priorities by specifying benchmarks and indicators for evaluation.

[28] The 2012 Hubei municipal officials' evaluation awarded points for decreasing energy consumption per capita, compliance with reforestation policy, improving drinking water quality, and reducing emissions of air pollutants, but also for increasing cultivable land. (Party Leadership Annual Assessment Index for Municipal Officials, Hubei Province, 2012, on file with author).

are inherently complex and challenging to effectively formulate, implement, and evaluate, more so than other policy areas. This stems from a high level of uncertainty in assessing environmental variables, relative risks and unpredictable intra-environmental effects, further compounded by human factors and behaviors, and human-environmental factor interactions. Environmental science is steadily expanding the bounds of human knowledge, but scientists explicitly and regularly admit less is known than unknown in the field.

> Our ignorance extends to global climate, habitat, and biodiversity. We are still unsure of the number of species in peril. For example, although the most commonly cited figure for the fraction of the global flora threatened with extinction is 13%, recent estimates [put that figure at 50% (Pitman 2002:298) The problem is not simply that we are in the early stages of scientific investigation but also that many environmental issues involve complex dynamic systems with nonlinear properties. [There are] several sources of uncertainty, including the poorly understood connections between species within an ecosystem, the extent of habitat needed to support a long-term viable population (especially for large carnivores), the effects of invasive species, and the potential negative effects of conservation efforts (Farber 2003:149).

> J.B. Ruhl points to several sources of uncertainty, including the poorly understood connections between species within an ecosystem, the extent of habitat needed to support a long-term viable population (especially for large carnivores), the effects of invasive species, and the potential negative effects of conservation efforts .

In other words, there is significant scientific uncertainty threaded through every step of the policy process. As a result, effective policy solutions depend on the accumulation of large amounts of data to compensate for the uncertainties and account for the larger, and more diverse array of factors. However, as environmental science is highly interdisciplinary, available data are often scattered across different scientific fields, and can often be contradictory, despite the presumed objectivity of natural science (Sigel, Klauer, & Pahl-Wostl, 2010). Since policymakers often lack the competence to evaluate competing scientific data, or to synthesize

even straightforward data with the right policy measures to produce desired outcomes, the uncertainty of policy outcomes can be further compounded.

Scholars have accordingly taken a variety of approaches to defining or specifying uncertainty within the environmental policy process, and to thereby find ways to reduce it. Miliken (1987) proposes uncertainty can be to be broken down into *state uncertainty* (what is known about the current environment and future environmental conditions), *effect uncertainty* (what impact environmental change has on human populations), and *response uncertainty* (what policies humans can devise to prevent or remedy environmental harm, and what the outcomes of those policies are) (Miliken 1987). Arentsen, Bressers, and O'Toole (2000) contend that this typology does not account for normative uncertainty, and propose that environmental policy uncertainty should be divided into *informational uncertainty* (stemming from the empirical unknowns, but including both problem definition/input and policy response/output steps of the policy process), and *normative uncertainty* (who decides what is a problem, how do they decide it, and how do preferences shape proposed solutions) (Arentsen, Bressers, & O'Toole, 2000). The authors further argue that these distinct types of uncertainty combine to produce significant policy implications (Arentsen et al., 2000).

As a result of these many uncertainties, consistent access to accurate information becomes even more important. Political and institutional conditions that limit or distort information thus pose a significant problem for the environmental policy process, and exacerbate many sources of uncertainty already identified. The scarcity or distortion of information increases the probability of policy failures. Authoritarian states heavily restrict the flow of information, and foster political conditions that lead to information falsification. In addition,

some of the institutions that can contribute to transparency and accountability, such as a consistent, accessible, and broadly integrated regulatory system, are less common in the authoritarian governance model.[29]

The explanations for China's contradictory and ineffective environmental governance regime focus largely on specific features of the Chinese state that affect all types of policymaking and implementation. Environmental policy is distinguished somewhat from other policy areas by virtue of the economic development-environmental protection conflict, but overall, the focus remains on political dynamics and institutions that apply to a wide range of other policy areas. However, environmental policy researchers argue that the dimensions and breadth of uncertainty in environmental policy render it distinct from other policy areas. If so, then China's environmental policy problems may result, at least in part, from those features distinct to environmental policy, rather than solely from those features distinct to China's policymaking and implementation dynamics.

Table 2.1. Policy Process Stage Framework for Assessing Dimensions of Uncertainty

Policy Stage	Structural feature or dynamic	Source or dimension of uncertainty
Problem	Preference falsification Principal-agent problem Non-institutionalized regulatory system	How is the problem identified? What is the capacity to understand the problem?
Design	Principal-agent problem Non-institutionalized regulatory system	What are the contributing variables and how can they be addressed? What are the constraints?

[29] Authoritarianism and strong legal institutions are not necessarily incompatible; some restrictive states have strategically embraced legal institutions in whole or in part (Moustafa 2014). Generally, however, such institutions are less common and less developed in authoritarian states. See Chapter 3, Section III for a more in depth discussion on the conflicts between authoritarianism and legal institutionalization.

Implementation	Principal-agent problem Non-institutionalized regulatory system	What is the capacity necessary to implement? What are the incentives to implement?
Evaluation	Preference falsification Principal-agent problem	To what extent does the policy succeed? What are the contributing factors?

In order to assess how structural features of politically restrictive states affect policy uncertainty, I disaggregate the policy process into four stages as shown in Table 2.1. Within each stage, I specify potential sources or dimensions of uncertainty. In all four stages, uncertainty stems partly from informational dynamics (e.g., what is known and how it is known), and partly on governance questions (e.g., capacity and incentives). These are based on patterns identified in assessments about China's policy problems, and larger questions about information problems characteristic of authoritarian governments. I specify three structural features or dynamics characteristic of authoritarian regimes that shape policy and governance information: preference falsification, the principal-agent problem, and the non-institutionalized regulatory system. Each also concerns specific actors and institutions that play a role in environmental governance. Preference falsification concerns citizens and stems from their reluctance to express perceptions or information that they perceive may be politically risky (Dimitrov, 2014; Kuran, 1997). The principal-agent problem is about the relationship between central and local government officials, whereby the center (principal) delegates the majority of governing functions to lower levels of government (agent) and ensures the agent acts according to the principal's preferences through an incentive mechanism (Grossman & Hart, 1983). The non-institutionalized regulatory system is about institutions common to authoritarian regimes reluctant to relinquish their discretionary power to legal systems (see, e.g., Moustafa 2014); while there are often a range of legal features,

the system as a whole is rarely entrenched and functional in a consistent, predictable, and transparent fashion.[30]

Preference falsification: In the problem stage, citizens have a role in reporting environmental damage. With local knowledge and interests, they are more likely to be aware of changes and be invested in addressing them. However, in China, expressing criticism about pollution can be risky if it is contrary to the preferences of other more powerful local actors. In addition, many in the general population may lack information about identifying pollution or its potential costs, which could limit reporting. Recently, citizens have also been able to influence party promotion by reporting environmental complaints to EPBs, although this may contribute to the political risk of reporting; in Guangxi, one EPB director indicated that public opinion comprises 20% of an official's evaluation on environmental issues (Hsu, 2013). In the evaluation stage, citizens can provide necessary monitoring and assessment: to what extent does the policy change the relevant behavior, and what were other effects of implementation? This requires reporting channels that are not politically risky. The very nature of reporting on the policy, however, will almost certainly be critical. The channels must therefore be secure, or the citizens will not provide reliable information.[31]

[30] See Chapter 3 for a full discussion of compartmentalized and fragmented institutionalization.

[31] See Chapter 5 for a discussion of reporting channels for citizens, and Chapter 4 on the topic of recognizing pollution problems in general.

Principal-agent problem: As discussed in the previous section, center-local relations significantly shape environmental policy outcomes. The center-local relationship is often framed as a principal-agent problem common to authoritarian regimes, since the center and the local officials have different, often contradictory preferences, and it is difficult to monitor agents without the various institutions of civil liberty (e.g., a free and critical press). Agents pursuing their own preferences have an incentive (and the opportunity, given weak monitoring) to provide biased information. Since information is likely to be shared between the center and local officials throughout the policy process, the principal-agent problem affects all four stages of this model. In the problem stage, local officials have incentives to restrict information about environmental problems because it could have negative consequences for promotion evaluation and it could be against his or her other interests and evaluation benchmarks. Although the center has added environmental indicators to the party evaluation and promotion system, they remain largely irrelevant when compared to other indicators, and are easily falsified. Hsu (2013) notes that one EPB official, when asked about the indicators, shared they were discussed often but ignored in the actual evaluation process (Hsu, 2013). SEPA officials found that many local government officials regularly fabricated environmental data in order to receive favorable evaluations (Xinhua, 2006). In the design stage, the center works with distorted information about what the agents are doing, what the nature and the extent of the problems are and any other local conditions that may affect a given policy. In the implementation stage, continuously distorted information about local government capacity means the policy design will not match that capacity.

> Since citizens value economic development, hierarchical regimes interested in monitoring lower level officials without undue auditing expenses can use economic statistics as information shortcuts. Lower-level officials, knowing the statistics by which they are judged and having some control over the bureaucrats who create those statistics, have an incentive to juke [i.e. manipulate] the stats (K. Xiao & Womack, 2014).

In addition, implementing environmental policies still often comes at the expense of economic interests, but the center may or may not be able to anticipate the economic effects of a given policy. Finally, while policies are announced by the center, local governments have some degree of discretion to specify aspects of implementation. This discretion is tempered, however, by the fact that the local officials are also working with distorted information from below due to low poor reporting rates from citizens, and from above, as the center restricts information deemed politically sensitive. These uncertainties undermine policy efficacy regardless of the local government's incentive to implement. Then, in the evaluation stage, as in the problem stage, local officials have neither strong incentive to report accurately on the relative strengths and weaknesses of a given policy measure, nor reliable and accurate information to report, since data from local citizens will likely be distorted.

Non-institutionalized regulatory system: Environmental policies are often contingent on rules and procedures that are part of a larger regulatory framework. Courts serve as enforcers of violations, assign penalties to violators, and adjudicate disputes; inadequate legal institutionalization, however, disincentives compliance by weakening the force of penalties and violations. It also affects how and to what degree claims may be brought.[32] In the problem stage,

[32] See Chapter 3 for an explanation of grievance formation and legal consciousness.

this is particularly significant: institutionalization affects the formation of environmental grievances by disseminating constitutive legal norms. Regulatory systems, or legal systems more broadly, also serve as a channel through which problems can be reported, but if they are poorly institutionalized, reporting may be risky, and perceived as ineffective. In the design stage, poor institutionalization means the degree to which these systems are capable of supporting and enforcing policies is unknown. Finally, in the implementation stage, as mentioned above, the regulatory system may lack enforcement capacity, which not only weakens specific claims but also undermines compliance.

V. Is Public Participation a Solution?

Preference falsification, principal-agent problems, and non-institutionalized regulatory systems are inextricably linked to authoritarian governance. Yet these features magnify the uncertainty problems inherent in environmental policy. While some policy mechanisms depend less these actors and institutions, there is no evidence suggesting a comprehensive and coherent environmental governance strategy can be implemented under these conditions. For example, Gilley (2012) identifies authoritarian environmentalism as a potential alternative that is more suited for political conditions. Authoritarian environmentalism is a "policy model that concentrates authority in a few executive agencies manned by capable and uncorrupt elites seeking to improve environmental outcomes, where public participation is limited to a narrow cadre of scientific and technocratic elites, while others are expected to participate only in state-led mobilization for the purposes of implementation, [often resulting in] a rapid and comprehensive response to the issue, usually with limits on individual freedoms" (Gilley 2012:

288). While this approach is applicable in some cases, the state lacks the capacity to implement such policies on a wide scale. In light of the severity and scale of China's environmental crisis, such a strategy becomes even less probable. What does this mean for environmental policy in China?

One potential course would be to improve the quality and quantity of public participation. In democracies, non-state actors such as individual citizens and NGOs can raise the alarm.[33] But raising the alarm can look a lot like expressing political dissent. Authoritarian states can perceive public participation as threatening, particularly in the form of protests, and China is no different. The sweeping economic reforms of the 1980s seemed to signal that the CCP leadership was similarly inclined to consider political reform. In the spring of 1989, there was global momentum for democratization. All over China, there were calls for political liberalization, and an increasing number of people, mostly students, gathered in Tiananmen Square—directly in front of the buildings that housed the CCP's central political organs—to protest continued political restrictions. Conflict among the leadership fragmented the party's initial response, which served to further motivate protesters, but Deng and his allies re-established party order and brought in the army to crush the protest and political dissent. Two lessons the party derived from these events and from the successful economic development of the following years have environmental consequences: first, public participation is inherently destabilizing, and second,

[33] Fire alarm oversight first defined by McCubbins and Schwartz (1984) is a decentralized response mechanism whereby principals empower third-party citizens to monitor subordinate agent behavior and to sound an "alarm" if they observe violations or malfeasance.

the promise of economic opportunity created by rapid development can be used to legitimize the denial of political rights.

Over time, other channels for public participation have emerged. Legal development has created spaces for engagement, with varying success, and the CCP remains conflicted about the political costs and benefits of stronger legal institutionalization. On one hand, bringing a suit might diffuse public tensions over pollution, tensions that might otherwise spark destabilizing protests. On the other hand, stronger laws and courts could undermine the party system by restricting political discretion. The petitioning system, while not new, has been reformed and continues to serve as a channel for complaints, which the center then uses to assess public opinion (Dimitrov, 2014). At the same time, problems with the petitioning process have been rampant, and potentially made citizens more frustrated as a result (Li 2008).

China clearly has an information problem. When combined with the inherent uncertainties of environmental policy and the scale and complexity of the environmental crisis, the uncertainties will continue to cripple any environmental governance strategy, regardless of the CCP leadership's commitment to address the damage. Yet that commitment can determine the extent to which the state is willing to make trade-offs, such as strengthening the legal system or increasing opportunities for public participation. Unfortunately, those magnified uncertainties that hamper environmental policy efficacy impede the leadership from determining the extent and nature of the environmental problems, what it can do about it, and what potential consequences there might be. It is also difficult to gauge the potential cost to stability of the crisis because of preference falsification. Consequently, the state is making cost-benefit analyses with limited and distorted information, which may in turn affect the state's will to make trade-

offs. As I explore in later chapters, there have been some indications that the center has sought to reduce these distortions through public participation mechanisms, but the results appear mixed. What is known for certain, though, is that villagers in rural China, often bearing a disproportionate pollution burden, have fewer opportunities to participate than those in urban areas, and are at greater political risk.

3 LAW FOR ENVIRONMENTAL GOVERNANCE: COMPARTMENTALIZATION AND THE TRANSFORMATION OF LEGAL MEANING

I. INTRODUCTION

There are no boats on the lake. Instead, they are strewn along the water's edge, baking in the sun. From the western shore, the lake's surface stretches unbroken to the mountains edging the eastern side. Down by the water, Mr. Bao checks his twine-and-can fishing lines. "They took the lake." Pointing down the shore toward the aquaculture factory, he shrugs. "Law gave them the lake. So we fish at night, along the shore."[34] That way, he explains, the patrol boats will not see them breaking the law. Local officials have used a 2007 environmental protection ordinance to give lake fishing rights to the local aquaculture factories, who use Chenghai to breed spirulina and silverfish. The waters of Chenghai are clearer than most of China's lakes and rivers, but they are largely prohibited to the villagers. Mrs. Bao laughs when asked if they can make a claim against the factories in court. "There is no way it can be done. The law isn't for us, you understand?"

As discussed in Chapter 2, laws and legal institutions form the framework of comprehensive environmental governance, and thus the flaws and strengths of a legal system will impact both policy strategy and efficacy at all levels and across different environmental policy mechanisms.[35] The role of environmental governance is to restrict the behavior of firms

[34] Interviews 2011070762, 2011070864.

[35] See Chapter 2, Section IV. See, also, Esty (1999) for a discussion of how different regulatory institutions shape environmental governance efficacy.

and individuals to protect environmental assets, and behavior only undergoes sustained change when it is regulated by rules and incentives that are transparent, consistent, and enforced. States with established and broadly integrated legal systems can use them to implement and enforce environmental regulation, and tend to incorporate standard legal language and procedures in the regulation to that end. The use of these established mechanisms and institutions reduces the transaction costs of new environmental regulations, requiring less state capacity than a *de novo* environmental protection framework would entail. In addition, the legal consciousness among citizens (the meaning of law and the expectations for how law can or should function)[36] reinforces the legal safeguards and opportunities for citizen participation, directly or via civic organizations, to monitor, report, and, depending on legal standing, sue polluters and those state actors who might fail to implement policy. States without such systems, often new democracies and authoritarian states, can still create and implement environmental policy, but the policy scope and compliance will be limited due to low state capacity to monitor pollution and enforce regulation as well as a dearth of avenues for citizen participation (McCann, 2013).

China does not have an established and well integrated legal system, and, thus far, the CCP leadership has had a mixed approach to further legal institutionalization. Law has undergone a dramatic transformation in the last 35 years: dismantled remnants left after Mao Zedong's era have given way to a system startling in its breadth, complexity, and function. Yet this transformation does not guarantee inevitable progress toward greater legal institutionalization, nor are legal mechanisms yet sufficient to serve the role in environmental governance attempted by the leadership. China is still a one-party authoritarian state, and

[36] For a discussion of the formation of legal consciousness and its role in public participation, see Ewick and Silbey (1999).

incompatible with a legal system in which law supersedes the interests of the political elite. Rather than a successful systematic integration of institutions, norms, and procedures across all sectors of law and all geographical regions, China's formal legal system is compartmentalized, both in terms of legal sectors (e.g., economic, criminal, environmental, etc.) and in terms of geographical location or level of government; each compartment varies along the dimensions of development, function, authority, transparency, consistency, and political visibility. The compartmentalization is partially by design and partially from neglect. Sectors that are of a high political value, whether because they threaten or support party control, receive much attention from the government. Sectors that are neglected might benefit from broader effects of legal institutionalization in high-value sectors, or they may suffer from the political ambivalence toward law sometimes evinced by the party. The compartmentalization does not only affect formal legal action, but also impacts the substance and form of legal norms—how formal legal institutions shape behavior and expectations in the broader social context.

The state has made environmental law a central feature of comprehensive environmental governance, both to improve policy outcomes and to mollify discontented citizens through a sanctioned and controllable channel, similar to the older petition system (which allows citizens to file paperwork to get government attention drawn to a given issue) (Dimitrov, 2014). While environmental legal development has ostensibly improved citizen access and general compliance, such improvements are still relatively limited. Moreover, there are less measurable but potentially significant consequences for legal institutionalization and the environmental crisis if such reforms affect how law and environmental policies are perceived and utilized.

In this chapter, I pose two questions that seek to examine these dynamics and to clarify significant tensions produced by the current environmental governance arrangement at the center and at the village level. First, how does the current legal framework work to promote environmental priorities? And second, how does the party's use of law as a tool to address environmental problems affect legal institutionalization in China overall? Macro-level research on environmental law in China—examining legal development from a comparative perspective, analyzing cross-sector features of legal institutionalization, and assessing national environmental law policy, for example—can partially address these questions. However, such a high-level focus on the formal legal sphere overlooks sociolegal factors that can alter legal norms, and hence, how environmental policy plays out at the local level, i.e., where its outcomes can be observed. I therefore also employ a micro-level perspective on how legal institutionalization and environmental governance are functioning on the ground, including how they are constituted in the daily life of citizens like Mr. and Mrs. Bao, by presenting three cases to illustrate the range and flexibility of legal meaning. The data suggest that the use of China's compartmentalized legal system to enact its environmental policies has undermined the power, both of law and of environmental governance, to shape behavior.

The chapter is organized as follows. Section II provides theoretical background relevant to China's legal development and current system. I utilize sociolegal theory and concepts to identify how law extends into daily life in informal ways, how legal norms, behaviors and expectations may be shaped under these conditions, and how they influence the formation and transformation of grievances. I then address the inherent tensions between authoritarian regimes and legal institutionalization, and propose a model to map the compartmentalization that can

occur as a result of these tensions. Section III explores the dimensions of compartmentalization and fragmentation, how they impact legal consciousness, the capacity of law to govern behavior and the political dimensions of an increasingly irregular legal landscape in the context of environmental governance. Section IV offers three vignettes drawn from interviews conducted in the lakeshore communities in Yunnan. I use them to illustrate how environmental law, used as part of the larger environmental governance strategy, functions. They also reflect the different meanings that law has taken on for villagers living with the pollution and associated policies. Through these vignettes, I explore not only how law and pollution affect their lives, but also how their perceptions have implications for legal development and the use of law as a tool for environmental governance. Section V summarizes, and highlights the salient arguments upon which subsequent chapters build.

II. Sociolegal Construction of Law and the Dispute Pyramid

The meaning of law and the power of legal institutions are shaped by political and social contexts, which are, in turn, shaped by law itself (Silbey, 2005). Through this process, law enters into daily life in unexpected and unacknowledged ways. Such meaning can influence the degree and manner of engagement with formal legal institutions when disputes or grievances emerge, or even whether they emerge at all. Sociolegal research shows that individuals predominantly experience and engage with law outside the formal justice system, whether through behavioral adaptations to legal norms or through the conceptualization of justice and rights. Consequently, scrutinizing formal measures neglects "[t]he emergence and transformation of disputes… before they enter formal legal institutions," as well as the instances in which disputes do not enter into a

formal setting at all (Felstiner, Abel et al., 1980:631; Silbey, 2005). Instead, rights and the social norms that relate to legal questions must be "evaluated in [their] social context(s), not just in formal legal institutions, and [scholars ought to] examine the competing formal and informal systems, institutions, and claims that define [these values and] rights and produce or minimize effect [on human behavior]" (Nielsen 2004: 74). Broadening the evaluative scope better captures the non-formal disputes' formation and transformation, and also allows systematic analysis of inaction—why those suffering a wrong or grievance would choose to do nothing. Choosing to do nothing comes can stem from instrumental and cultural causes with their own power, rather than resulting from an insufficiency of actionable incentives (Sandefur, 2007).

The "naming, blaming, claiming" dispute pyramid by Felstiner, Abel and Sarat (1980) yielded two significant contributions to the law and society field. It provided an accessible framework for analyzing how and when grievances transition to formal legal action, and it showed how such legal action was only one small part of a much larger story of law. The pyramid is composed of three levels. At the first level, the wide base of the pyramid reflects the relatively common occurrence of "naming" or identifying a grievance. The second level, when disputants assign blame to another or to an entity, is narrower than the first because not all named grievances can or will be blamed on another party. At the claiming level, the pyramid

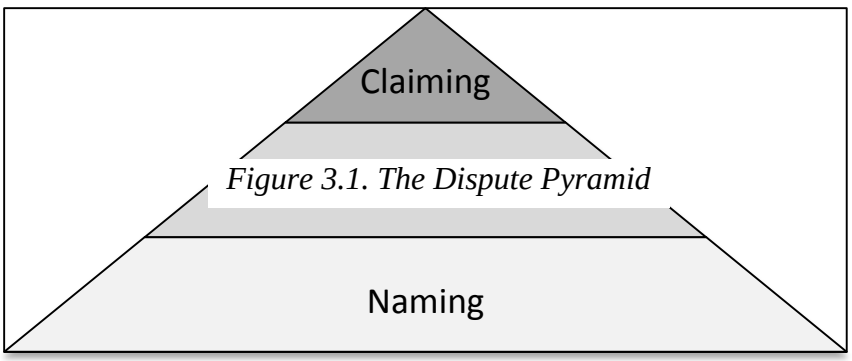


Figure 3.1. The Dispute Pyramid

narrows further, reflecting the small number of disputes for which claims are pursued (Felstiner et al. 1980).

The dispute pyramid model has been extensively tested, reframed, adapted and adopted in an "effort to explore the submerged iceberg" of grievance formation and transformation (Silbey, 2005:335). Scholars have explored how individuals move between levels, whether through transitional agents or external variables(Diamant, Lubman, & O'Brien, 2005; Edelman & Suchman, 1999; Felstiner, Abel, & Sarat, 1980). Other scholars have examined the pyramid's applicability in legal contexts outside the United States, such as in Russia (Hendley, 2013) and in China(Michelson, 2008).[37] These studies have confirmed the model's universality, and have shown how the bounds of the pyramid—defining naming, blaming and claiming and their attendant courses of action—can be strongly contingent on sociolegal variables, such as legal consciousness and political context.

Legal consciousness comprises the various "understandings and meanings of law" moving through a given social context (Silbey, 2008:695). Over time, these understandings and meanings may become more fixed and thus "become part of the material and discursive systems that constrain future meaning making" or they might be discarded when found to be in conflict with other factors, such as experience or worldview (Gallagher & Wang, 2011). In environments where legal experience is widespread, and legal norms are systematic and consistent, legal consciousness is likely to closely reflect legal function. In rural China, because formal legal

[37] Michelson (2008) researched dispute formation and transformation in China, where he found that the process from naming through claiming varied according to political and economic connections.

experience is so rare, legal consciousness is primarily derived from a combination of observed political behavior and language, perceptions about pre-existing legal norms and institutions, and encounters with others who may bring slightly different meanings to law through their own points of reference, all framed by personal characteristics. These characteristics range from a person's risk orientation to one's sense of political or personal efficacy. Marginalized groups, for example, tend to regard law as a part of the system of oppression; thus, they view and constitute legal meanings through a filter of suspicion (Ewick and Silbey, 1999:192; Nielsen, 2004). Without deep and broad legal institutionalization, legal consciousness is not anchored to the meaning of law as determined by state-guided legal development, making it susceptible to intentional political manipulation. Since legal consciousness can affect grievance formation (naming), responsibility attribution (blaming), and the targeted remedy (claiming), the state has an interest in influencing legal consciousness. To put this in the context of environmental damage, legal consciousness can affect whether severe pollution in the local environment constitutes a grievance, how the aggrieved party identifies someone or something to blame for the pollution or failure to prevent the pollution, and the type of remedy and course taken to pursue that remedy, such as whether it is a claim brought in court or a massive and destabilizing protest.

Disadvantaged or marginalized groups already tend to regard the law as part of the broad system of oppression that contributes to their powerlessness—they are up "against the law," rather than working "with the law" or "before the law," the three orientations vis-à-vis law's role

proposed by Ewick and Silbey (1999, 2014:678-679).[38] Those who perceive the law as a tool are more willing and able to engage with the law. Then, once they have engaged with the legal system, they often experience increased confidence in their own competence to formulate a grievance and pursue action again (Galanter, 1974; Gallagher & Wang, 2011; Kritzer & Silbey, 2003). That means that while the repeat users are exposed to and invested in law as presented through the formal court system, those already marginalized become further alienated from that version of the law. Thus social or political position significantly impact how one constitutes legal meaning and what purpose the law may serve and for whom. That is not to say that legal consciousness is fixed "against the law" among the rural communities in China: despite their socio-economic and political marginalization, legal consciousness is changeable through experience, or perceptions and experiences proffered by other members of one's community (Hernández, 2010). Certainly, however, the general lack of alternative versions of law's role, combined with its periodic use as a tool of control by the political and economic elite, inhibits a shift toward a more objective or instrumental version.

III. Reconciling Authoritarian Priorities and Legal Institutionalization: The Compartmentalization Model

Empowering non-elites to engage with law and use it as a tool or to develop systematic legal norms sufficient to encourage "before the law"-compliant behavior is discordant with

[38] To operate "before the law" places law in a separate space, objective and removed, but nonetheless providing a framework for law-compliant behavior even when not intentionally engaged. To work "with the law" means to use the law as an instrument or as rules of a game, pursuing an end and using the law to do so (Ewick and Silbey 1999, 2014).

authoritarian modes of governance. Political elites stand to lose power if made to account for behavior by non-elites or if held to the same objective standards. Yet the CCP leadership continues to utilize regulatory mechanisms to support environmental governance mechanisms, and has apparently sought to encourage the general population to use law, to work "with the law" in order to address environmental damage. And environmental law is not the only legal sector whose development has been championed and prioritized by the leadership—indeed, other sectors have been far more clearly institutionalized.

China's legal system has dramatically expanded in conjunction with the economic transformation starting in 1978, and has progressed at an unprecedented speed and scale. This process has confounded legal scholars and economists alike. Until relatively recently, general consensus found law and authoritarian governance to be incompatible over the long term; instead, legal institutionalization and modernization were supposed to lead to law's supremacy—the rule of law rather than the rule of man—and thence to economic development and political liberalization (Dezalay & Garth, 2002; Ohnesorge, 2007; Trubek & Santos, 2006). In the last 50 years, more than 100 new countries have gained independence. The progression of their legal systems has presented an opportunity to understand how economics, politics, and law function together to produce diverse outcomes for stability, economic development, and citizen participation. Among these new states, democratic and non-democratic regimes have demonstrated that legal development and democratization do not always co-occur. Instead, as may be observed in China, authoritarian regimes can and will utilize legal institutions toward politically beneficial ends. Indeed, legal institutions associated with liberalized markets and democracy can be employed as tools by authoritarian regimes to legitimize the violation of

human rights and the suppression of dissent (Moustafa, 2014; Rajah, 2012). Law "has been a key tool effecting the decimation of opposition parties[,]…the dismantling of independent media[,]…and the thwarting of an autonomous civil society" (Rajah 2012:46). In his review of research on legal development under authoritarian regimes, Moustafa (2014) proposes several objectives that might justify legal development and expansion from the perspective of an authoritarian regime, including law's potential to facilitate market transitions and to bolster regime legitimacy. This is not to suggest that authoritarian regimes can use legal institutions without political risk; effective legal institutions can be double-edged swords within an authoritarian state. When used to reinforce authoritarian structures, for example, legal development can also contribute to incremental political liberalization.[39] Courts can be used to constrain the momentum of a political movement by limiting the space available for contestation and dissent, but courts still offer the opportunity to dissent without the need for broader collective action that the regime could suppress (see, e.g., El-Ghobashy 2008; Moustafa, 2007; Chen and Xu, 2012). As China, Egypt, and Singapore demonstrate, regimes can balance legal development between disarming and suppressing discontent and retaining political control, although miscalculation can contribute to regime change, as in Egypt in 2011. Legal development and authoritarian states can be compatible. Thus, analysis should shift focus to examining how states order the trade-offs between legal development and political control. The overthrow of President Hosni Mubarak's regime in Egypt in 2011, for example, may not be a

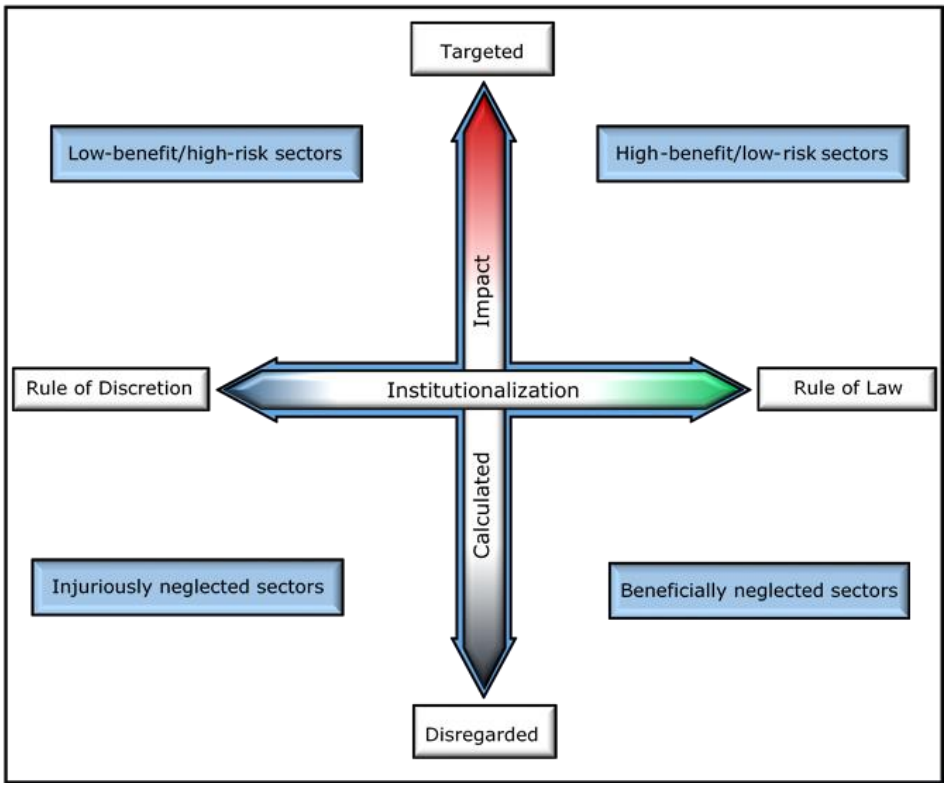
[39] In Egypt, the Supreme Constitutional Court "was granted a remarkably autonomous appointment process and the power of judicial review as a way to assuage investor concern over the security of property rights. Yet, within a decade of its establishment, the Court became an important engine for political reform, often ruling against regime interests and incrementally expanding political rights" (Moustafa 2014: 285).

direct result of legal institutionalization, but evidence suggests the court system contributed to the regime's delegitimization (Moustafa 2014). At the same time, Singapore has continued to prove that strong legal institutions and resilient authoritarianism can co-exist (Rajah, 2012; Rodan, 2004).

China's central leadership has sought to take advantage of law's benefits, particularly law's role in facilitating market transitions and in bolstering regime legitimacy, without risking loss of political control. By confining development to those sectors perceived most beneficial and least politically risky, the CCP has forged a careful path to pursue those features of legal development that serve political objectives while avoiding commitment to a process that poses an inherent threat to political discretion (i.e., commitment to rule of law *in toto*). This compartmentalization process has occurred across legal sectors, geographical regions and political structures, and has resulted in a highly irregular legal landscape, which hinders the development of legal norms and a systematically collective legal consciousness.

In Figure 3.2, I lay out a simple model that shows how a state might map the costs and

Figure 3.2. The Compartmentalization Model



benefits of developing different legal sectors. This, I argue, reflects China's legal institutionalization process. Authoritarian incentives for developing law are balanced with the risks to political control, creating significant ambiguity and uncertainty for consumers of law and for the lawmakers themselves. The CCP develops some legal sectors to serve specific objectives, and constrains others because the political risks they pose outweigh any political advantage. If a given sector is perceived to have significant political implications, either positive or negative, that sector will be targeted by the state for either institutionalization or discretion. An example of a legal sector whose development possesses positive political implications is the economic legal sector. This sector was developed swiftly and relatively uniformly, and is strongly enforced, for

the purpose of encouraging economic relationships with external markets and corporations, because economic growth is a top priority of the party. Economic law is among the most institutionalized and highest-functioning legal sectors because it clearly serves CCP objectives: facilitating economic development generally, and reinforcing regime legitimacy indirectly through economic success, i.e., the "carrot" mechanism in the carrot-and-stick tactics of political control (Kennedy & Stiglitz, 2013; Lubman, 1999; Peerenboom, 2002). [40] The government has prioritized the transparency and function of those laws and regulations that govern business transactions and contracts in order to attract foreign direct investment, to reduce transaction costs for industry, and to improve access to cheap labor and foreign markets (Allen, Qian, & Qian, 2005; Huang, 2003). By contrast, if developing a legal sector has negative implications for state control, the leadership would seek to isolate it from other areas of legal development. Criminal law illustrates an intentionally constrained sector: laws and judgments are opaque, with few rights for criminal defendants and ambiguous procedural mechanisms (Liu & Halliday, 2009).

While criminal law and business and contract law represent two sectors at the upper end of the calculated-impact spectrum in the compartmentalization model (see Figure 3.2), sectors that the state perceives as politically irrelevant, or of significantly less political importance than other political priorities are thus low-stakes. Such neglect renders sectors more vulnerable to external influences and/or political interference. Some sectors appear to have been affected by a spillover of positive and negative legal norms from other sectors, whereas others shift away from legal norms and become predominantly subsumed by political conditions—because the national

[40] See Chapter 5 for the role legal development is playing to bolster regime legitimacy and political trust more directly.

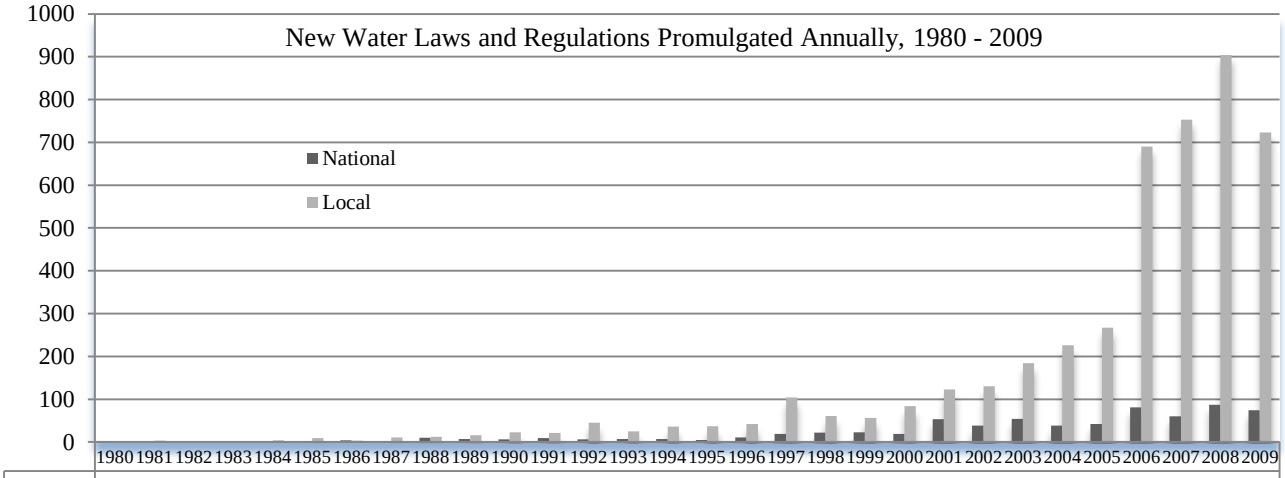
leadership appears to lack interest or value in a given sector, local officials gain discretionary power and can order the sectors according to their interests with little oversight. For example, until recently, food safety regulation was lax and fragmented, governed only by the "Food Hygiene Law of the Peoples' Republic of China" enacted in 1995, and suborned to political and economic interests (Pei et al., 2011; Tam & Yang, 2005). Many food production entities received "inspection-free" designations that allowed them complete autonomy from regulatory oversight based on the political reasoning that enforcing regulations would inhibit their economic growth (Pei et al., 2011). One of those designees, Sanlu, was the main distributor of the melamine-contaminated milk discovered in 2008, when at least six babies died from melamine poisoning, over 52,000 children were hospitalized for kidney failure and damage, and an additional 250,000 children suffered mild but still measurable effects (Pei et al., 2011). As discussed in Chapter 2, party politics incentivize economic profits at the expense of environmental policies when the two are in apparent conflict. Until recently, the party emphasized the promotional value of economic development benchmarks, which were often in conflict with environmental policies, including the enforcement of environmental laws and protecting citizen reporting channels (H. Li & Zhou, 2005).

Geographical and hierarchical compartmentalization has created further inconsistencies. There are horizontal and vertical conflicts in political accountability within the courts: authority to enforce judgments (and willingness to cross local interests) varies by locality and topic. Local officials may also have ties to local industry that supersede any generalized directive from the center (Cai & Treisman, 2006). Furthermore, because local government has greater control over local courts, the interests of local government trump the ambiguous signals from the center. The

food safety sector, for example, suffered from a major regulatory imbalance between urban and rural areas—because urban areas had more consistent oversight, factories seeking to avoid regulatory strictures maintained rural business and operations—which exacerbated the melamine crisis and resulted in a disproportionate number of affected children in the rural areas (*Advancing food safety in China*, 2008). Although there is now a great deal of political interest in the environmental sector, the historical neglect has contributed to a lack of systematization of laws, norms and procedures. The enormous number of new rules and new legal mechanisms and fora, such as specialized environmental courts[41] and regulatory space created for environmental impact assessment participation, cannot be easily engaged and refined or adjusted to better serve their designated purpose, nor can conflicts of law be easily resolved. (See Figure 3.3 for rates of promulgation of water management and pollution regulations.)

[41] Formal environmental law is expanding: eleven environmental courts were created since 2007, with varying caseloads, jurisdiction and effectiveness, but it is too soon to determine whether they are a useful innovation; hundreds of new laws have been promulgated at every level of government as local officials implement regulations passed down from the center (see Figure 1 for promulgation rates regarding water pollution).

Figure 3.3. The Proliferation of Water Regulation



	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
National	0	0	1	2	2	0	4	2	10	7	6	9	6	7	7	5	11	19	22	23	19	53	38	54	38	42	81	60	87	74
Local	0	3	1	1	4	9	3	11	12	16	23	21	45	25	36	37	42	104	61	56	84	123	130	184	226	267	690	753	904	723

There are two weaknesses to the proposed compartmentalization model, and to the process of compartmentalization in general. First, it is rare that a sector would fit neatly into a quadrant, and do so without reference to other legal sectors. Environmental law, for example, has high-benefit features and high-risk features, and outcomes are hard to predict. And that leads to the second problem, which is that legal sectors can be highly interrelated, and resist compartmentalization. Because environmental law is an amalgamation of different legal and procedural mechanisms, it does not lend itself to straightforward compartmentalization. Instead, it is anchored to torts, health policy, property rights and human rights laws and norms. Consequently, while CCP leaders have seemingly managed to compartmentalize legal development without cost to political control, it is not clear that effective development of targeted sectors can ever occur entirely without spillover effects, whether through a shared procedural framework or by setting precedents. For example, the CCP recently revised the

Environmental Protection Law (EPL), authorizing civil society groups to represent the public interest by bringing suit in court. (Environmental Protection Law 2014) Up until that point, there were no legal sectors in which non-governmental groups could bring suit on behalf of the public interest because public interest was perceived as too amorphous, and potentially too politically dangerous, especially when wielded to allow a non-governmental group, which was not explicitly controlled and driven by state interests, standing to offer criticism in the public and legitimizing forum of a court. In the year since the revision, however, the courts have moved slowly and cautiously: the first case brought by the Friends of Nature, an environmental NGO, was submitted on January 1, 2015, when the revisions first went into effect, and was decided against the polluters in late October. While it is too early to know the full ramification of the new law, there are many legal professionals and scholars in China who hope that environmental public interest litigation will lead to other types of public interest litigation, as courts and CCP leadership grow more comfortable with the scope and procedure, and will thus lead to legal institutional spillover across more politically sensitive sectors.

Even when there is increased institutionalization across sector compartments in one direction, there can continue to be legal irregularities that undermine legal institutionalization in other dimensions. The rural/urban divide, for example, consistently leads to diverse legal outcomes, and unfortunately, neglected development of legal institutions in more rural and less strategically significant but often heavily polluted regions can inhibit environmental governance. Cases brought under the EPL illustrate this pattern: although claims have been accepted in courts in Xiamen in Fujian Province and in Tianjin City, both coastal and economically important population centers, those filed in Ningxia and Inner Mongolia by the China Biodiversity

Conservation and Green Development Foundation have been universally rejected. Policies and regulations written according to standards, infrastructure or expected capacity of one area or sector often do not travel well when implemented elsewhere. In response to the air pollution crisis evident over Beijing and other major population centers, an amendment to the Air Pollution Control Law was adopted by the Standing Committee of the National People's Congress in August, 2015 (Xinhua, 2015). This amendment regulates gasoline content, prohibiting certain impurities that exacerbate smog and health effects; however, while Beijing plans to install pollution surveillance devices along key traffic routes to ascertain vehicles' compliance to the law, such compliance-measuring devices are either not available or have not been set up systematically, and the law does not specify or suggest alternative measures (Xinhua 2015).

While the political strategies and the wide range of legal institutionalization across diverse sectors supports the compartmentalization model, it is impossible to assess the state's intentions, and the degree to which the present legal system reflects a purposeful strategy. Some of the flagging legal development is the result of historical and political contexts that cannot easily be shifted or reformed, such as Mao's legal legacies, or the structural consequences of the center's "fragmented authoritarianism" model.[42] China's political fragmentation, the conflicts among competing ministries with overlapping functions and between levels of government,

[42] "Fragmented authoritarianism" was a term first used in 1988 to describe China's piecemeal devolution of authority immediately below the highest party ranks that were often deliberate and intentionally fostered through progressive restructuring and political ddddddddddddddddd According to Mertha (2009), fragmented authoritarianism can yield benefits for local actors? as "territorial, jurisdictional, and other political cleavages provide comparatively fertile ground for various contending state interests to push their agendas and to arrive at compromises that better reflect their own parochial or institutional goals" (2009: 996).

predispose any method or mechanism of governance toward functional asymmetry. However, while political fragmentation can explain asymmetries and conflicts in some legal sectors and regions, it does not address how other sectors have been successfully institutionalized and others, successfully isolated. Fragmentation is an underlying dynamic that shapes law when it is neglected by the leadership, but it does not account for the cohesion within the economic legal sectors which were deliberately targeted for development and institutionalization in order to serve higher political aims.

The distinction between de facto fragmentation and deliberate compartmentalization status can be subtle, and a matter of perceived relative political values by the party elites. Looking at the legislative bottleneck of legal promulgation, interpretation and conflicts of laws shows how fragmentation can be superseded by compartmentalization targets, but still plays an impactful role on legal consciousness and function. When there is a conflict between laws or regulations, only the legislative body that created a given regulation has the authority to interpret and resolve conflicts involving that regulation. Although that legislative authority may be circumvented by the Standing Committee of the National People's Congress, the SCNPC meets only bimonthly. During these meetings, the 175 party congress members must provide constitutional interpretations for proposed or contradictory laws and regulations, strike down non-compliant or poorly interpreted local regulations in accord with national law, and supervise the work of the Supreme People’s Court, the Supreme People’s Procuratorate, and the Supreme Military Court. The Committee is further empowered to remove and appoint top-level ministers and it is responsible for ratifying treaties and adjusting policies on all relevant political priorities. Given abundant responsibilities and insufficient time, the Standing Committee lacks the capacity

to complete all of its tasks, and therefore will prioritize those conflicts that carry greater political weight. Local and provincial governments are then left to interpret often vague laws delivered as political declarations, and hence to create regulations. Compartmentalization can be triage, picking the high-stakes issues and abandoning those issues that do not meet the threshold for party prioritization to the untender and uncertain vagaries of local officials' own interests and priorities, which are themselves shaped by fragmentation, spillover norms, and other contextually relevant dynamics.

IV. Different Shades of Law in the Environment: From Yunnan's Lakes

Looking just at the numbers of cases brought and heard across disciplines, the picture of legal development in China can seem quite rosy. Even in the environmental sector, there appeared to be increased engagement with the courts. Nationally, there were 608,245 total environmental complaints filed in 2004, a 60% increase over the number filed in 2000 (National Bureau of Statistics 2000, 2004). The Supreme People's Court (SPC), the highest court in China, estimated that pollution cases are rising by 25% per year (Stern, 2013). But increased pollution cases do not necessarily signal legal institutionalization, nor does it indicate higher rates of just outcomes; instead, the increases could be primarily driven by rising pollution rates, and a perceived lack of alternative channels through which to seek remedy. In addition, while numbers of cases initially increased, more recent records should be cause for concern that the law is not perceived as a reasonable channel through which to pursue environmental grievances (see Table 3.1). While the information is incomplete (and shows evidence of falsification in Yunnan's case), numbers do appear to be dropping.

Table 3.1. Environment-Related Disputes Filed and Processed in the Courts, 2007-2012

	Administrative Violations		**Administrative Reviews**	
	Total	Processed	Total	Processed
2007				
PRC	109,074	101,325	521	435
Jiangsu	13,733	13,268	41	39
Hubei	1,262	898	10	9
Yunnan	2,378	884	5	5
2008				
PRC	94,897	89,820	528	428
Jiangsu	7,535	7,354	28	25
Hubei	1,363	903	2	2
Yunnan	685	603	5	4
2009				
PRC	78,788	73,719	561	465
Jiangsu	9,892	9,512	54	32
Hubei	998	728	12	6
Yunnan	520	537	4	4
	Note: In Yunnan Province for 2009, more Admin. Viols. were reported to have been processed than the total.			
2010	*No data available.*			
2011				
PRC	119,333	N/A	838	N/A
Jiangsu	6,172		29	
Hubei	1,609		1	
Yunnan	1,423		3	
2012				
PRC	117,308	N/A	427	N/A
Jiangsu	5,002		12	
Hubei	1,209		2	
Yunnan	865		2	

Protests linked to environmental concerns are also on the rise. Existing research has demonstrated that direct experience with the legal system can result in "disenchantment," comprising generally negative perceptions about the potential of law and the courts to provide remedy for grievances (Gallagher, 2006; Landry, 2008). Though negative perceptions do not automatically discourage use *per se*, they assimilate into the broader collective legal

consciousness, and such an effect cannot be dismissed when determining the shape and reach of law as it expands in China.[43] If law is not perceived as a reasonable channel through which to pursue remedy, it can no longer serve as tool to legitimate the state, nor will it serve the state (and social stability) by providing a channel and forum through which to air grievances. For individual potential "users" of the legal system—the ordinary citizens with an justiciable grievance—they must have some sense of legally constituted rights and rules, and possess internal political efficacy sufficient to their own perceptions of those rights and rules.[44] If the rules are inconsistent or difficult to understand, and/or the individual lacks confidence in her knowledge or political wherewithal more broadly, then she may perceive the grievance as incompatible with the potential dispute resolution channels. For example, Landry (2007) found respondents who had memories of Maoist legal institutions were far more likely to express *a priori* distrust of the current legal system and low opinions of legal institutional competence. When formulating grievances, they were far more likely to seek remedies such as requesting the opportunity to air their complaints and asking for an explanation (*shuofa*) from a responsible party, remedies found in petitioning and mediation through village leaders (Gallagher & Wang, 2011). By contrast, younger respondents do not remember previous legal norms and so lack the bias of the older generation. Moreover, they have higher rates of exposure to a wide range of media, and high levels of media exposure are strongly associated with the propensity to seek

[43] Hendley (2013) shows that in Russia, for example, individuals continue to use the courts despite rather low opinions of courts' functionality and legitimacy.

[44] Internal political efficacy describes the degree to which individuals perceive themselves as competent to form political opinions and express those opinions through political behavior and participate in political life. I explore internal political efficacy, its role in naming, and how it affects participation in greater depth in Chapter 4.

dispute resolution through the courts (Stockmann & Gallagher, 2011). It is therefore not surprising that these younger respondents frame grievances and remedies in terms of the legal system. For both groups, the meaning of law and of justice varies according to their preferences for, and familiarity with, different channels for resolution.

The following three vignettes demonstrate different ways in which law has combined with environmental governance to produced distinct outcomes for legal consciousness. These stories should not be considered representative of general trends. Their purpose is to demonstrate a variety of the potential local-level effects of legal compartmentalization on legal development and environmental governance. Compartmentalization and the subsequent fragmentation in neglected legal sectors and regions have prevented the systematization and integration of a common legal consciousness. In the absence of a coordinated and institutionalized legal narrative, legal consciousness derives from other factors, creating alternative meanings for law. These accounts highlight the alternative meanings, but also illustrate how using poorly institutionalized legal tools to address environmental problems affects environmental governance. The tensions between fragmented legal institutions and environmental policy are particularly strong in Yunnan where these incidents occurred. The Yunnan provincial government and the central government have strong incentives to successfully implement environmental protection measures: Yunnan is a biodiversity hotspot, the principal destination for eco-tourism, and a crucial producer of fruits and vegetables for the domestic markets. Nevertheless, as the third poorest province, and thus unlikely to contribute to economic targets, the province has not benefitted from targeted legal institutionalization efforts.

A. Dianchi: Evidence of Legal and Policy Failure?

Dianchi is the largest lake in Yunnan by surface area, and the eighth largest in China. Nicknamed the "Pearl of the Plateau," it is bounded by a sacred mountain to the west, and by Kunming, the provincial capital and home to 8 million people, to the north and east. The rest of the lake is surrounded by farmland and smaller communities. Most of the farms cultivate flowers to be shipped overseas, and because the flowers are not native species, the farms depend on copious amounts of fertilizer and pesticides, all of which subsequently drains into the lake basin. Although Kunming is not heavily industrialized, and the mild climate means there is little need for seasonal heating or cooling, there are many industrial sites nearby (including several factories, a mine, and several sewage treatment plants).

The pollution in Dianchi has received extensive national attention. Dianchi is one of the three lakes in the central government's "Three Lakes, Three Rivers" policy for renewing China's freshwater resources. Despite the attention and clean-up efforts that have cost more than US$2.2 billion,[45] Dianchi has consistently received a >V rating, the worst rating, since 1994.[46] Pollution reduction strategies have in some cases worsened the problem. In October 2006, a dredging ship tasked with collecting the silt on the bottom of Dianchi for treatment mistakenly discharged the ship's oil into the lake, creating an 18,200 square meter oil slick.[47] Efforts to dredge the lake

[45] Yunnan Provincial Environmental Statistics 2013, available at http://www.ynepb.gov.cn/gyhp/jhdt/201303/t20130304_37734.html .

[46] 水环境质量状况,云南省 1994 年环境状况公报(第二部分环境质量状况), available at http://www.7c.gov.cn/color/DisplayPages/ContentDisplay_390.aspx?contentid=31566

[47] " 治污船反而"致污":百亩滇池水面 遭遇废油污染," 2006 年 10 月 16 日, Xinhua News, available at http://news.xinhuanet.com/fortune/2006-10/16/content_5206425.htm

continue, although scientists advise that dredging will actually release into the water additional pollutants that have thus far been trapped in the sludge. New proposals have been conceived, including redirecting the Jinsha River to clear the water (which would severely damage the ecosystems that depend upon the Jinsha).[48] Boats can often be seen on the lake, systematically pulling the overgrowth of algae from the surface; such algal overgrowth is caused by phosphorus and nitrogen fertilizers continuously flowing into the lake from nearby farms. Wastewater plants have been built and improved, but new construction has also increased sedimentation in the tributaries leading to Dianchi.

Three days a week, Mr. Luo catches a ride with a friend who brings him into Kunming from his village ten kilometers to the southwest of the city. He waits to be picked up by the side of the road, out of view of his neighbors. His friend will drive him to one of three tributary rivers that pass through Kunming before flowing into Dianchi. Only one, the Panlong, still has running water that can be followed from the northern edge of city to the lakeshore at the southern end, while the other two, the Mintong and the Qinshui, have been "rerouted." During my first visit with Mr. Luo, we stood on a bridge over the dry riverbed of the Mingtong, and stared down at the hills of trash below. Mr. Luo explained that new housing developments had been constructed after older developments had been razed to house more people. Unfortunately, the planning for these developments did not take waste management infrastructure into account. With no sanitary services available to the new tenants, household wastes were simply dumped into the riverbed. But that was not why the river had stopped flowing—if I dug down into the trash, I might find

[48] Interview 2011012821 with a research scholar who has ties to local government. Interview on file with author.

black sludge and mud, but not much water. Farther upstream, most of the water has been siphoned off to irrigate the flower fields, as well as to supply the gardens of the wealthier housing developments. He told me that he knows this because he has made monitoring the threats to Dianchi a personal goal. Three days a week, he brings his notepad and a pen, and he walks down alternating stretches of the Panlong, the Mingtong, and the Qinshui, taking notes in his journal. He claims to have studied all of the applicable environmental regulations, and so he is able to make records of violations he observes. On the last "field trip" of the week, he completes his report and passes it to a friend. The friend then finalizes the report, and submits it to the relevant government bureaus on his behalf.

Mr. Luo grew up in one of the villages on the shores of Dianchi and swam in its clear water regularly as a child. Now the water is murky and fetid due to algae and waste. Growing up next to a lake makes you love the lake, he says. "This lake is my mother, and now she is sick." So two decades ago, he decided to try to take care of the lake, "just as we care for our parents when they become sick." At first, he was able to take time to keep document damage to the lake while continuing to support his family. Eventually, though, as the strains on the lake grew, he could not do both, so he became a full-time environmental activist, tracking policy changes and emergent hazards. Through his work, he became well known to polluters and local officials alike, and he was eventually honored by the central government in Beijing for his tireless efforts to protect the lake. But Kunming continued to grow and Dianchi water quality continued to slide. Over time, the local officials found Mr. Luo's activities too troublesome; in their esteem, he went from being an environmental hero to being a public nuisance. He was arrested twice, and soon

his wife left him. Finally, he decided to move to his current village, just outside of town, so that his activities wouldn't bring unwanted attention to his family.

By learning the environmental regulations ostensibly promulgated to protect Dianchi from further deterioration, and by actively monitoring local adherence to those regulations, Mr. Luo has become part of the regulatory system, a public participant augmenting state capacity to improve environmental protection. He is an example of success of the CCP's regulatory reforms designed to engage public participation in environmental governance efforts. Unfortunately, his version of environmental regulation is not same version implemented and reinforced by the state, which brings him into conflict with the local authorities. Mr. Luo's experiences illustrate the low regard of the central government for clear and consistent meaning of law, or at least, the insufficient capacity of the center to enforce the law. There is no more ideal test case for the efficacy of environmental protection and remediation regulations: Dianchi is located next to an important city that has clear political and economic reasons for protecting the environment; the central government has expressed commitment to Dianchi clean-up efforts; and four of the environmental courts created to address only environmental problems are located in Yunnan. In fact, the highest-level environmental court is located in Kunming itself, with a view of the lake. But the courts hesitate to assert their authority, reflecting the negative consequences of compartmentalization and fragmentation. The Kunming Environmental Municipal Court has heard only one case concerning chemical run-off into Dianchi, and the judgment of that case has

been postponed. When I asked Mr. Luo about the law and the new courts, he laughed. The courts "are false—they will do nothing. They mean nothing." [49]

During a subsequent visit, I asked him again about the law. He replied, "The law is something that influences reputations." Nobody will stop polluting until "they lose face from acting improperly….Violating the law is acting improperly."

How could that be, I asked, if he got in trouble for reporting it, and those that violated the law continued to do so without penalties, and without losing face?

China has become a country of laws, he told me. Maybe law does not yet mean enough here, but it would eventually. Until then, he said, "I will act properly, even if they punish me. There is no other way."

Dianchi's present state demonstrates that even with clear incentives for environmental protection and suitable policies in place, the lack of effective enforcement results in environmental policy failure. Environmental law in remote Yunnan has not been a legal institutionalization target for the center. As a neglected sector, it has been negatively impacted by political fragmentation. Consequently, the regulations to address the severe pollution of Dianchi are ineffective from a policy perspective. Yet Mr. Luo's story shows how spillover can occur across sectors to affect legal consciousness, and is an example of beneficial neglect: despite the failures of environmental law at Dianchi, Mr. Luo has constructed his expectations of law from the CCP's expressed commitment to a systematic ideal, rather than constructing law's meaning around those failures. Mr. Luo seeks to hold others to a consistent standard of law, drawn from

[49] Interviews 2011041201 and 2011051101.

other sectors and perceptions, rather than basing his expectations on the regulatory failings he experiences in his work protecting Dianchi. Nonetheless, there is another somewhat troubling dimension of evaluation uncertainty to Mr. Luo's story (see Chapter 2.IV). Mr. Luo is not protesting. He is meticulously and systematically monitoring tributaries and a lake that the central officials have shown a clear interest cleaning up. He is not famous, but he is known to the provincial and central government after the various accolades he received. He is providing the government with information in precisely the way public participation mechanisms in environmental policies should allow. He personifies the best form of public participation that the CCP leadership could hope for in dealing with the environmental crisis, but the government is either unable or unwilling to utilize these data, and he remains the target of negative local political attention. No matter the policy and regulatory reform, if the CCP leadership is truly committed to effective environmental governance, without resolving the information falsification problem that inhibits evaluative capacity, even ideal instances of public participation will be ineffective.

B. Yangzonghai: Peripheral Justice and Constitutive Leverage

Yangzonghai is located 45 kilometers from Kunming on Yunnan's central plain. Half of the lake lies within Kunming Prefecture, and the other half within Yuxi Prefecture. This complicates environmental monitoring and enforcement. There are no urban centers closer than Kunming, although there is some industry, and two larger towns, and several very small villages. Along the eastern shore, the Spring City Golf and Lake Resort golf greens spread in terraces next

to newly constructed pink condos, built to take advantage of the natural beauty. Looking at the water, there is no visible sign of pollution, because arsenic contamination is barely perceptible.

Until 2007, Yangzong was relatively clean, according to the State of Yunnan's Environment Reports. In June 2008, however, the prefecture-level EPBs were notified by the provincial-level EPBs that arsenic was present at dangerously high levels. The EPB staff found eight companies to be polluting. By September 2008, according to local officials, notifications had been issued to villagers that the water was unsafe to drink, and the government began delivering bottled water to the 26,000 residents who used Yangzonghai as their primary source for drinking water. Aquatic products from Yangzong were banned from the markets, and villagers were informed not to eat fish from the lake, and were prohibited from swimming in it. A majority of the arsenic was found to be leaking from poorly disposed industrial waste at the Yunnan Chengjiang Jinye Industry and Trade Company, hereafter, Jinye, a manufacturer of fertilizer. Jinye had already been fined six times between 2002 and 2008 for pollution with the maximum fine of 100,000 RMB; because the fines were trivial when compared to overall profits, the corporation's pollution violations continued.[50]

In April 2009, three Jinye executives were tried in the Chengjiang County Basic Level Court, under the Criminal Law of the People's Republic of China, which includes a wide range

[50] "*违法成本低，受法成本高" (*"the cost of violations is low, the cost of compliance is high") is a commonly heard phrase among polluters in China. Until the economic disincentives are strong enough, it pays to pollute. Recent amendments to the Water Pollution Prevention Control Law have increased financial penalties for pollution incidents with no maximum limit specified for serious incidents; it remains to be seen how effective this move will be.

of specific offenses such as "disrupting the order of social administration."[51] The Jinye executives were accused of "causing a major environmental pollution accident," and found guilty. The case attracted a great deal of attention in the news, especially when 26 prefecture and county officials were fired for failing to prevent the contamination.

Because of the high visibility of the court case, the bottled water brought in regularly, and the prohibitions against fishing and swimming, I expected to find most villagers aware of the pollution and of the potential health risks. After all, the information was supposed to have been widely and thoroughly disseminated. I also expected perceptions about the legal system in the case and generally to be somewhat consistent among the lake communities. Instead, the perceptions about pollution and law varied, as did the perceived health risks. In Mingjucun, though I saw no large-scale fishing, individual fishermen stood on the shore casually casting their lines into the water. There were also small boats hugging the shores while villagers pulled in their catch in smaller nets. When asked about the pollution, many shrugged. "The catch is smaller, but it is still worth going out on the water." Despite the official injunction against the consumption and sale of fish from Yangzonghai, the man and the woman in one boat admitted that they sell the fish in nearby villages, and eat it themselves. "We are not sick," they say, and shrug again.

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[51] Criminal Law of the People's Republic of China, under Part II, Chapter 6 ("Crimes of Disrupting the Order of Social Administration"), Section 6 ("Crimes of Undermining Protection of Environmental Resources"), Article 338:

> "Article 338. Whoever releases, dumps, or disposes of radioactive wastes, wastes containing pathogen of contagious diseases, and toxic materials or other dangerous wastes into land, water, and the atmosphere in violation of state stipulations, causing major environment pollution accidents, heavy losses to public and private property, or grave consequences of personal deaths and injuries shall be sentenced to not more than three years of fixed-term imprisonment or criminal detention, and may in addition or exclusively be sentenced to a fine; and in exceptionally serious consequences, not less than three years and not more than seven years of fixed-term imprisonment, and a fine."

When asked about the legal case, many thought it was irrelevant. "We stopped drinking the water six years ago when the taste changed. We never talked to government officials when we heard that the lake was poisoned in 2008." What they did want to talk about was the compensation they received from local polluters. Many thought the compensation was very fair—it allowed them to send the village children to the larger schools in nearby towns, affording them a better opportunity for education—that is, until they were offered money to sell their land altogether.

> In 2009, and then again last year, we have had bureaucrats and companies come offer us money to move. They use the water as an excuse, telling us that it is no longer safe to live here, water our crops, eat the fish. They offered us 30-40,000RMB, but how can they promise us we will have food if we move, have work? This is where I was born, and I am healthy! (Interview 2011051623).

After further conversation, one man acknowledges that he would move, but only if they were to offer him 200,000 RMB. He expects them to offer more the next time they come (Interview 2011101604).

Table 3.2. Pollution in Yangzonghai, 2007-2012

Year	*Water Quality*	*Transparency (m)*	*Trophic state index*	*Primary pollutants*
2007	II	4.09	32.1	-
2008	V	3.87	34.3	arsenic
2009	>V	3.20	43.79	arsenic
2010	IV	2.27	46.57	arsenic
2011	IV	1.96	39.8	arsenic
2012	IV	1.99	42.8	total nitrogen, organic waste, arsenic

Data source: Yunnan Provincial Environmental Statistics 2007-2012.

Yangzong's quality has continued to deteriorate (see Table 3.2). There were brief improvements measured in 2010, but the annual average for that year and since indicate continued pollution. Either the arsenic clean-up has plateaued, or new sources of arsenic pollution have emerged, and there has been an increase in agricultural run-off (measured as total nitrogen) and organic waste. It appears that action by the courts has not solved Yangzonghai's pollution problems. But there are many regulatory and environmental explanations that can explain regulatory failures.

The Yangzong case is interesting because of how the villagers perceive (or do not perceive) the law, despite the formal court case in a court open to the public, with clear and predictable procedures and outcomes. As Yunnan should be an ideal case in which to implement environmental protection measures, the contamination case and subsequent legal proceedings demonstrated that it was possible for the powerful to be held to account for harming the health and livelihoods of 26,000 in order to save money. Yet even when there was a direct and seemingly accessible exercise in environmental regulation on their behalf, one in which more connected and wealthy executives were sent to jail and state officials were punished, there was little approbation of the law, and none at all of the court as a potential channel through which villagers could channel future grievances. The villagers in the village of Pearl Cove viewed environmental regulations and the court case solely as a bargaining chip (for the bureaucrats and the company representatives). The law as exercised by the state institutions in this instance is peripheral, even if exemplary, making little impression on the legal consciousness of the villagers. Whatever forces have shaped the meaning of law in Mingjucun, it seems to have entrenched a durable disregard for the form of justice administered by the court.

In contrast, inhabitants of another village in Kunming prefecture found environmental law could work for them in striking a bargain. Between 1999 and 2000, village crop yields decreased significantly, and there were morphological defects among the plants. After discussing the problems at a village meeting, the villagers determined that the soil in their fields must be polluted, and moreover that the likeliest source of the soil pollution was a local factory that had been witnessed dumping truckloads of unidentified waste at night. The local EPB personnel were considered trustworthy, so the villagers went to the EPB office and requested personnel to help them to mediate with the factory representatives for compensation for the villagers' loss of property. Without new property rights laws, there would be no identifiable damages and hence no leverage the villagers could use to push for compensation. The fact that the villagers trusted the EPB staff to help them with an environmental harm ought to be encouraging. Unfortunately, however, they had no expectation that the EPB ought to have prevented or remedied the pollution, which raises questions about how EPB officials are able to fulfill their roles when villagers are unconcerned or unaware of the nature of those roles. This account does show that formal legal institutions have constitutive power. The rights consciousness evidenced by the villagers' pursuit of compensation demonstrates a spillover of generalized legal norms that helped to constitute and seek remedy for their grievance; in spite of the decision not to access the courts, the community nonetheless was able to identify a harm based on previously unrecognized rights (Interviews 2010061102, 2010061103, 2010061104).

While this second story shows how law can shape the naming of a grievance and provide leverage with which to make a claim outside the formal system, the first story raises questions about trust in the system and the durability of the legal system's potentially worsening

reputation. There are many paths that lead individuals to a negative view of law: experience with the legal system causes disenchantment (Gallagher, 2006), lack of experience with the legal system makes one less likely to frame grievances that could be adjudicated through the legal system, and those who are members of a marginalized group tend to regard law with suspicion. Then, in this story, we see an optimal exercise of law as a mechanism for justice, and there appears to be no improvement in the perception of law; instead, law's role as a tool of the more powerful is seemingly reinforced. Under what circumstances could the negative views of law be reversed? And how might the durability of these perceptions differ within a less restrictive state, where law is not compartmentalized and may therefore not be as strongly perceived as an instrument of the state?

C. Chenghai: Co-Optation of Law

The villages along the eastern and western shores of Chenghai have no land to cultivate, and have long depended on the lake as a source of food and economic security. But if one visits Chenghai in the summer and early fall, there will be no boats on the water. Instead, the boats are pulled up on the shores, some tangled with old netting, and the villages are quiet and often seem empty.

Past a fence next to a small village hotel, there is a broken wall that abuts the lake. Most summer nights, Mr. Bao sits on the wall, visible only as a faint silhouette against a backdrop of water. The first night we met, I had walked down to the wall to introduce myself, curious about his nightly occupation. I sat down that night and almost tripped over twine and cans set up in a

row along the wall, with longer spans of twine trailing in the water. They were fishing cans, and he only fished at night, he told me, because laws prohibited fishing in the summer months.[52]

Mr. Bao shared his story. He had lived in the same village his whole life. Years ago, he took his boat out every day to fish along with others in his village. In 2006, a new factory was built at the south end of the lake. The factory breeds and processes a small fish that is considered a delicacy in Chinese cuisine. The factory owners and local government officials determined that the most profitable approach to breeding the fish on a large scale was not to use the more common practice of raising fish in tanks or enclosures, but to breed them in the lake itself. This presented a quandary. Using the lake meant that anyone with fishing access could poach the fish, cutting into profits. In order for the arrangement to work, there had to be some way to limit fishing during critical periods of harvesting and breeding. Consequently, Mr. Bao shared, the local officials made an environmental law that prohibited fishing during certain periods of the year, and further prohibited catching any small fish breeds, whether they were the factory's product or not.

Now, every night, Mr. Bao sets up his fishing lines along the wall, attached to cans so he can rest in between checking the lines. The patrol boat comes by in the morning, so night is the safest time. He has built a small shelter 10 feet from the shore, and in the early morning, after he has pulled his final catch from the water, his wife and granddaughter arrive. His wife sorts through the catch and prepares breakfast. Mr. Bao's son and daughter-in-law moved to Kunming to find work since there is no way to support the family in the village.

[52] Interviews 2011070762, 2011081162, and 2011101562.

When asked about how "the law" had given the lake to the aquaculture factory, he explained that one day, they were just told. Patrol boats enforced the ban and that was that. The law, he explained, was for local officials to use. I asked him if he had thought about filing a complaint or trying to bring a claim against the factory, he laughed. "The local officials won't help. That's their factory." He agreed that the municipal officials weren't so bad. He had heard they were very capable. But he didn't have the time or money to try.

The Yunnan Chenghai Protection Ordinance is a provincial-level regulation promulgated in January 2007. The ordinance states that the county government must establish "lake closure times" in order to maintain the "ecological balance of nature and local economic development benefits."[53] The vague and ambiguous regulatory language makes the problems for environmental law and protection policies quite clear. First, any time regulation holds environmental protection and economic development to be equal (even in regulation explicitly designed to protect environmental resources), economic development will be given the higher priority, and the intent of the environmental protection policies will be entirely disregarded, if not contradicted. Second, the responsibility for regulating Chenghai and the surrounding ecosystems lies with the municipal government. There are no provincial or national ordinances that dictate environmental protection measures for Chenghai. Consequently, the municipal government has inadequate information about relevant environmental and behavioral variables, such as the dynamics of the lake's ecosystem and of the local fishing industry among the local communities. Third, law becomes yet another political and economic tool turned easily toward

[53] Translation by the author.

exploitative and unsustainable development that largely profits local officials and colluding economic players at the direct cost of Chenghai's villagers.

The co-optation of legal institutions by state and economic players changes the meaning of law itself. Why would a villager from Chenghai think to raise the alarm if he or she observes illegal and potentially egregious environmental harm? The law is not a secure channel through which one can report a violation, it is merely a method for legitimizing continued destruction. Mr. Bao never expressed concern about being caught by the patrol boat, even though he knew he was violating the law as implemented. However, in the two villages closest to the factory, only one villager, Mr. Pa, was willing to speak with me, and only because I showed him my student identification card and explained repeatedly that I would not report him to the authorities. When queried about the lake, the village, and his opinions on law, Mr. Pa yielded little. Upon two subsequent visits, the village was either completely empty or those at home stayed behind their closed doors, except for Mr. Pa, whom I encountered on the road outside the village. But because I had no other information from villagers in Mr. Pa's village, it is not clear whether his reticence and apparent fear of the factory representatives' displeasure was a commonly held sentiment, or was unique to Mr. Pa. Whereas Mr. and Mrs. Bao expressed resentment and frustration at the drastic changes to their lives and livelihoods caused by the co-optation of the lake, they were casual about violating the fishing prohibition and the periodic sweeps of the patrol boat. In Mr. Pa's village, however, the collusion of state authorities, law and the factory officials and its consequences for these villagers, seemed ominous and far more oppressive.

The accounts from Chenghai clearly illustrate what it means for Mr. and Mrs. Bao, Mr. Pa, and others in their communities to find themselves "against the law." Law is not a potential

channel for communication, an instrument of justice, nor is it the objective, removed formal system that inspires compliance regardless of engagement. Instead it is simply one more discretionary and arbitrary tool of the local elite. If the CCP leadership is truly committed to environmental protection, it may find the compartmentalization approach to legal institutionalization has weakened law's utility as a tool in environmental governance. If that is the case, continuing to seek to use the law is unlikely to produce positive outcomes. Instead, it appears that law ranges from irrelevant, at Dianchi, to a formalist exercise with little impact at Yangzonghai, to a tool of environmental and social damage in Chenghai.

V. CONCLUSION

China's legal transformation has been staggeringly rapid and comprehensive, given the state of its legal system in 1978. But China is still a determinedly one-party authoritarian state, constantly balancing the risks of legal institutions with the benefits. These tensions have produced a highly uneven and compartmentalized system, where legal norms are well established in some sectors, and some regions, but not in others. These create systemic problems such as weak or contradictory enforcement of judgments, political structures that exacerbate legal conflicts, and high levels of uncertainty—for officials, legal professionals and citizens—about legal meanings and standards. In addition, confusion and enforcement problems generate higher levels of risk for individuals from marginalized groups, such as poor villagers in rural China—if they make the wrong call seeking remedy from the legal system that cannot or will not enforce judgments against more powerful players, they have no protection from the political consequences.

In this chapter, I have explored how the CCP leadership's compartmentalized approach to legal institutionalization has not only affected legal development across different sectors and regions, but also how it can affect environmental governance as a result of a weakened regulatory structure. The central state has demonstrated it can transform and systematize the law, as it has done in the economic sector. That is has not done so for environmental law means that it lacks the will or the capacity. I argue that the evidence points to a combination of both: the CCP leadership has prioritized control over the sectors with the greatest potential benefit and the greatest potential risk, because it lack the capacity to control the potential risks to the regime. To an authoritarian state picking and choosing discrete pieces of the law to integrate into its own political framework, all the unknowns about the formation and transformation of grievances—the submerged iceberg of the dispute pyramid—pose a serious problem. Compartmentalization has only staked control over some areas of the social, cultural, economic and contextual interactions through which legal consciousness forms and shifts. Consequently, the gaps in the legal system have been filled in by alternative norms, practices and interests, subject to fragmented political discretion.

Environmental law depends upon a systematic regulatory framework that reaches beyond strictly environmental concerns. Components of environmental law extend through a range of sectors and utilize political and bureaucratic mechanisms to improve outcomes and extend capacity to monitor and enforce. Because environmental laws are not being formulated around standards and procedures that have been tested by use and known to those responsible for enforcement, however, there have been high transaction costs, and mistakes have the potential to be politically costly. Low rates of legal use overall mean low use rates of environmental law.

Environmental law captured and exploited by local political and economic players undermines future environmental policies.

As environmental law and implementation is shaped by the political norms and legal institutions already in place, so too is there evidence that environmental law shapes the political and legal norms and institutions. The Chinese state is very aware of the escalating costs of failing to address pollution and might therefore judge effective environmental governance worth the risk to political control. The incentive to pursue comprehensive behavior modification may incentivize increased legal institutionalization which could spill over into other areas of law, and raise citizen expectations. It could provide a roadmap for expanding law's role in an acceptable fashion for the CCP, and for lawyers and citizens seeking to frame "rightful" grievances in other areas of law (O'Brien, Li, McAdam, Tarrow, & Tilly, 2006). There are also potential negative consequences. Environmental law captured and exploited by local political and economic players not only impacts perceptions of environmental law, but also affects the perceptions of law generally. If law, environmental or not, is a tool of the powerful to serve their interests at the expense of ordinary citizens, then that contributes to negative perceptions of law generally, which I explore in Chapter 5.

Stories from villagers in rural China demonstrate a clear interaction between legal development and environmental protection. Law as a bargaining tool and law's co-optation by local economic interests are worrisome examples of the way in which fragmented mutual reinforcement between environmental law and policy and the legal system more broadly has undermined the potential of the legal system to act as a pressure valve for discontent. Instead, law serves local government and businesses at the expense of village communities. Thus party

leaders are drinking poison to quench a thirst—committing resources to pursue environmental strategies, even when the underlying structures are unsound, and when the efforts may result in worsening outcomes—in order to address the environmental crisis.

4 POLLUTION BY ANY OTHER NAME: RELATIVE RISK PERCEPTION IN THE LOCAL (POLITICAL) ENVIRONMENT

I. INTRODUCTION

When the air is brown and the lake is green, it should be simple to say, "That is pollution." However, interviews among villagers in rural China illustrate that such an acknowledgement is not, in fact, so simple. Instead, many villagers deny specific types of pollution while acknowledging others, and some villagers completely deny the presence of pollution in their communities. One explanation for this puzzle, offered in environmental politics and sociology research, is that information asymmetries and inadequate education compromise environmental awareness. Yet in the countryside, people who depend on natural resources for basic subsistence do not need formal education or access to external information to see that their environment has altered, nor that brown skies and green lakes threaten their own livelihoods and health when their crops fail and fish die. Why then might these individuals remain silent or deny the clear hazards?

The problem is not a lack of environmental awareness, but a lack of incentive to verbally acknowledge environmental change and damage. More precisely, the incentive is insufficient to compensate for the perceived political and social risks of such acknowledgement. Using the HEPS data as well as the qualitative data I collected from Yunnan's lakeshore communities to disaggregate the pollution response process, I find that the progression from awareness to

acknowledgement is not linear, but is subject to an individual's calculation of risk and incentive, which depends upon an amalgam of particularized characteristics, pollution attributes and exogenous contextual risks. Despite the immediacy and scale of China's environmental crisis, voicing a critique of pollution can be interpreted as a critique of the state, with attendant political ramifications. The choice to "name" pollution can be an act of contention. My data show that observable environmental damage, education, and access to information are insufficient to explain pollution naming in rural China. Instead, variables that shape risks and incentives are significant; these variables include trust in pollution-remediation institutions, political alignment (or contention) with village leadership, and whether the respondent has a child. I also identify patterns specific to type and degree of environmental change, e.g., the pollution's source and its severity, as well as the degree to which it can be observed without specialized knowledge or technology.

This chapter builds upon the previous chapters by examining, from the perspective of ordinary villagers, what participation in environmental governance could mean, and how villagers balance the damages they suffer from the environmental crisis on the one hand, with taking political risks for uncertain outcomes on the other. In Chapter 2, I reviewed the place of public participation in environmental policy: it expands the state's monitoring and enforcement capacity, and the space for such participation is explicitly incorporated into environmental regulatory design. However, nominal space for public participation neither guarantees that the public participates, nor that any such participation even aids in environmental management. In China, the designated political and regulatory spaces for citizen public participation composed of institutions, such as the legal system and the petitions system, some media outlets, and reporting

channels built into the public interface points of government offices and agencies, are not widely regarded as predictable, effective, or safe. As explored in Chapter 3, law is highly vulnerable to political interference and produces uncertain outcomes, such as being converted into discretionary tools for the elite at Chenghai, or failing to translate a legal success into effective environmental remedy, as at Yangzonghai. If the space for participation is perceived as high-risk or high-cost and/or low-benefit, then the decision to participate requires either compensatory incentives or an even higher perceived risk of inaction. In the villages, these barriers can be much higher. Often geographically remote, without financial resources, and rarely well-connected politically, villagers are even less likely to see successful outcomes and are far more likely to be at risk of political coercion. Nevertheless, despite these deterrents, many villagers do choose to take action—via protests, letter-writing campaigns, media appeals, and court cases. In such cases, what factors shape villagers' responses to the environmental crisis? How do they perceive environmental risk and how do they integrate that risk with real and immediate economic and political hazards? And what distinguishes them from villagers who do not act?

This chapter is organized as follows. Section II describes objective and subjective variables, initially identified through analysis of the qualitative data, that affect the perception and verbal expression of pollution's risks, as well as other pollution-responsive acts. I propose a new model for analyzing pollution response choice and use qualitative data and previous research to explain the significant variables and dynamics of the model. In Section III, I analyze the HEPS data to test key implications of the model. I investigate what the quantitative data and results do and do not tell us about the pollution response process generally, and what they

contribute to the process model. Section IV concludes with a discussion of the ramifications of the pollution response process and naming as an act.

II. Perceiving Pollution: The Stakes of Knowing and Naming

Qilu Lake is heavily and obviously polluted. At the water's edge, dead fish float among pieces of trash. The water itself is bright green in some places, covered with slimy algae. In Tonghai, the county seat, a papermaking plant pumps effluent into the water. The runoff from three mines and a machinery factory into the lake is rife with heavy metals. When asked about lake water quality, many villagers readily acknowledge the pollution and its effects:

> Twenty years ago, before the pollution started, we could drink from the lake. Now, even the well water has become polluted (Interview 2011073147).

> The pollution has made the lake shallow. The irrigation trenches don't have enough water to flush the garbage thrown in them, and the water that is there hurts the crops (Interview 2011073149).

> We have health problems. Cancer. Stomach problems (Interview 2011100571).

At the eastern end of the lake, in Yicun, I hear more of the same. The water is polluted, the crops suffer, and the villagers can only get potable water from high on the nearby mountain. Here, most blame pollution on a local fertilizer plant that dumps waste into the lake through a single pipe. Every villager I interviewed spoke of the polluted shores and reservoir, and all identified the plant as the main source of the pollution. Driving to the next village beyond the fertilizer plant, we cross over the effluent pipe. It cannot be seen from the road, so I walk up the drive

toward the plant. Closer to the main gates, a concrete culvert can be observed, snaking from behind the plant toward the lakeshore, before disappearing under shrubs and soil. Continuing on to the next village, Ercun, I ask about lake water quality. The lake is fine, the water is clean enough, say the villagers. Why is the water green? The water has always been green. There is no pollution. I ask about the fertilizer plant—is the factory polluting the lake? Oh no, they assure me, no problems from the factory. Four of five villagers interviewed deny the lake is polluted and insist the factory is not dumping waste in the lake. When I return for a second round of interviews in Yicun, I ask about the villagers from Ercun. Why, I ask, would they say there is no pollution? Can't they see it? An older woman laughs. "They all work there," she says, gesturing toward the fertilizer plant (Interview 2011100563). These two villages encounter the same pollution in the same lake, in an extremely poor area. But in one village, when villagers calculate the risk of acknowledging the pollution, they have strong economic and political incentives to remain silent.

It makes sense that self-interest would inhibit critique in most situations. Yet these responses raise important questions about how individuals acknowledge pollution and about what the lack of acknowledgement means. To what degree do political, economic, and social factors influence the act of naming pollution as a problem? If political risk perception shapes not only the level of critique but also whether individuals acknowledge pollution at all, then naming pollution could be considered a political act, potentially a contentious one. Moreover, how people name pollution cannot be assumed to mirror perceptions of environmental quality and environmental risk. The presumed equation of environmental awareness with verbal acknowledgement, and silence with lack of awareness, is problematic for two reasons. First,

authoritarian states discourage open debate, especially about topics that cast governance in a poor light, so naming pollution may not simply demonstrate awareness, but might also signal contention. Second, while silence on pollution could reflect a lack of awareness, it might instead indicate insufficient incentive to name pollution. These distinctions matter a great deal when assessing pollution-response processes, identifying socio-political contexts, predicting potential consequences, and designing a strategy for effective environmental governance.

If, as described in Chapters 2 and 3, the central government views public participation as an important component of improved environmental governance—whether through naming a grievance in the legal system or via increasing enforcement capacity through citizen monitoring mechanisms—but naming is inhibited by political and socio-economic considerations, how effective can such participation be? Using the dispute pyramid framework for reference, these tensions may in effect be turning the dispute transformation process upside down.[54] Political and personal risks motivate individuals to assess potential courses of action even before they may name the grievance.

Although studies on environmental risk perception have recently begun to explore the role of social, economic, and cultural factors in the formation of such perceptions, the field has thus far neglected to explore the potential for political risk to impact verbal expression of such perception. The field also largely disregards political risk factors altogether. Previously, many scholars emphasized education and access to information as the predominant factors determining environmental awareness (see, e.g., Harris 2006). More recent studies have sought to

[54] For an explanation and elaboration on the dispute pyramid framework developed by Felstiner et al. (1980), see Chapter 3.

differentiate between awareness of changing environmental conditions and how individuals express concern (e.g., Anderson et al. 2007; Schelhas and Pfeffer 2005; Barber, Biddlecom and Axinn 2003), but nonetheless focus on whether the pollution or environmental change is perceived as a problem, rather than on whether a change has been observed at all. While this may influence the perception of risk, it still does not explain how individuals could remain silent in the face of severe, immediate, and visible pollution.

III. NAMING AS AN ACT: A NEW MODEL

Naming pollution—voicing acknowledgement of a particular harm or criticizing environmental conditions—can be an act of political contention within the strictures of China's authoritarian regime. The degree of contention depends upon local context, personal risk orientation, and many other subjective judgments and exogenous variables. Environmental damage is not, overall, as politically sensitive as some other issues, such as human rights, land reform, and government corruption, but pollution-related mass incidents continue to increase. Local contextual variables also can magnify the risks. In addition, as discussed in Chapter 2, the CCP has sought to enforce environmental protection measures at the local level by incorporating new environmental benchmarks into the evaluation system for local officials.[55] If local officials fear a poor evaluation due to environmental problems, they may be more invested in addressing emerging disputes or more likely to crack down on such disputes.

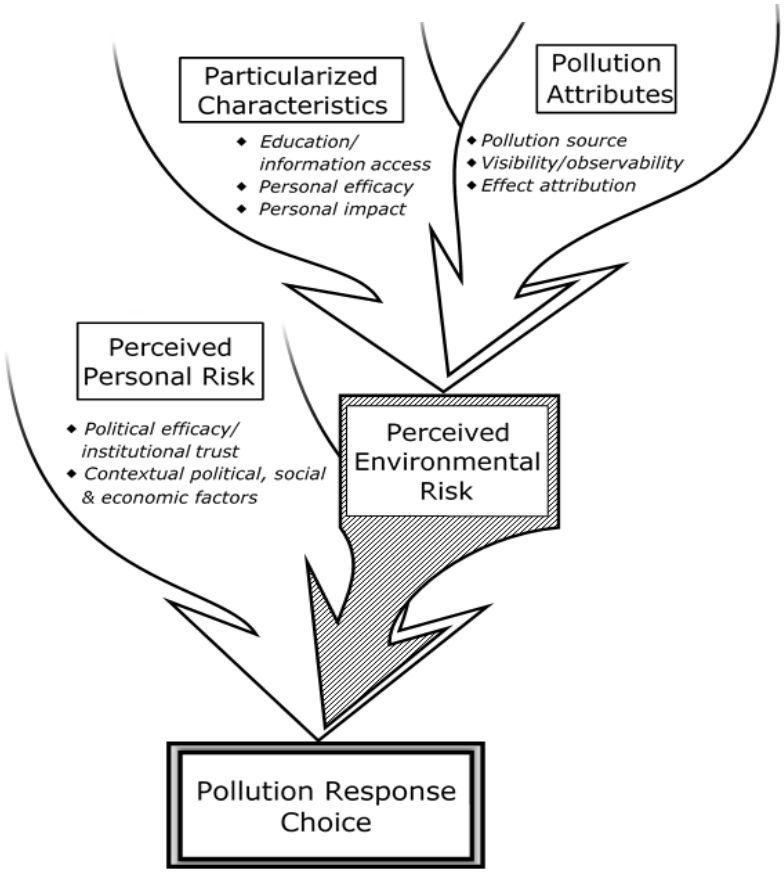
[55] See Chapter 2. See, also, 2012 Hubei Cadre Evaluation Guidelines and Assessment, on file with the author.

By reframing the naming process as action, rather than passive perception, I clarify how an individual's verbal acknowledgement of pollution might depend on his or her perceptions about the available course of action, including the risks and rewards of each potential course. Using the strict environmental risk perception approach found in previous research on this topic, the lack of such acknowledgement signifies either the individual is unaware of the pollution or regards the environmental risk value as negligible or non-existent. Given the pervasive visible indications of environmental damage in China, however, the explanation that the non-naming villagers are simply unaware of pollution contradicts both the received wisdom and the substantial evidence that people who depend on natural resources for subsistence are keenly sensible of changes to those resources. Conversely, the alternative explanation—that the environmental risk is judged insignificant—can certainly be a factor. Environmental risk perception is a critical component of the pollution-response process. Moreover, it raises questions about how individuals balance the environmental (or health) risk of not acting with the political risk of acting in a political setting where effective pollution remedies may be unlikely. Thus, silence on pollution can mean either the political risks are too great or that the environmental risks are judged insignificant, when filtered through other priorities and perception factors.

This dissertation project began by posing the following questions: how do villagers in rural China perceive the environmental crisis, how do they choose to act in response, and what factors shape their chosen course of action? The data I collected suggest the process has two steps, and that speaking out about pollution is one of several pollution response choices. In the first step, individuals estimate the environmental risk; and in the second step, they weigh

perceived environmental risks against perceived personal risks associated with the possible courses of action and inaction. These possible courses include naming pollution, remaining silent, petitioning, colluding with polluters, seeking mediation through village officials, protesting, denying the pollution, bringing a law suit, and migrating.

Figure 4.1. The Pollution-Response Process Model



As I show in Figure 4.1, the first step, calculating perceived environmental risk, is generated through two types of constructs: pollution attributes and particularized characteristics. Pollution attributes are objective characteristics that can be observed or measured. Conversely, particularized characteristics are subjective and vary by individual. In other words, pollution

attributes comprise the pollution itself, its source, and its effects on the environment, while particularized characteristics encompass individual perceptions of that pollution and its effects on the individual and his/her community. Having calculated the environmental risk, individuals then make a second calculation, weighing that environmental risk estimate with an estimate of personal risk. Estimated personal risks include social, economic, political, and health costs, the benefits of each choice, and the anticipated results. There are also particularized attitudinal variables that impact perceived personal risk calculation: political efficacy (which affects the magnitude of each action's perceived costs and benefits) and trust in the relevant institution, whether a government office or a system of applicable rules.

In the first step of the pollution-response choice process, pollution attributes are filtered through an individual's particularized characteristics that shape the interpretation of pollution, to produce some value of perceived environmental risk. In the second step, those environmental risk perceptions are processed through additional action risk constructs, generating the choice about whether and how to act. In states where there are few, if any, political risks associated with speaking out about pollution, it is harder to argue that a verbal acknowledgement is an act because the costs may be imperceptible. However, in China and other politically restrictive settings, the political context attaches risk to voicing environmental concerns. If verbal acknowledgement of pollution is subject to the perceived personal risk calculation, it is an act, and if such an act is subject to political risks, it is an act of political contention. Below, I describe some particularized characteristics and pollution attributes that shape perceived environmental risk. I then provide an overview of factors that contribute to the perceived personal risk

calculation. Concurrently, I identify how the literature addresses these factors and specify how they manifest in the pollution-response choice process in rural China.

1. Pollution Attributes

Pollution can be measured objectively. Although the causes, interactions, and outcomes of environmental damage are subject to the uncertainty problem discussed in Chapter 2, we are technologically equipped to measure most environmental changes. Indeed, in many cases, simple observation is sufficient, as when refuse or dead fish fill the water, or when the air is brown on an otherwise clear day. However, while some methods to identify pollution and assess its severity and effects can be performed by anybody, regardless of education or access to information, other methods require more advanced technology and/or specialized scientific knowledge. The attributes of any type of pollution can determine whether the pollution and its effects can be observed, measured, or even understood by individuals lacking specific technology or specialized scientific knowledge, such as Chinese villagers. The particular attributes of pollution—its source, whether it is observable, and the degree to which its effects are attributable—thus serve as the starting point for any determination of environmental change and the attendant risks, in these communities.

Visibility or observability: Observable changes in the visible environmental media can be clear pollution indicators and are, to some extent, the most dependable indicators. Severe pollution of surface water bodies and air often produces color shifts and altered transparency—in short, brown air and green lakes indicate pollution. They are, however, still contingent on some

knowledge of pre-pollution and post-pollution conditions to discern the change. When queried about local conditions, for example, several villagers explained that their reluctance to opine stemmed from a lack of local knowledge: they had not lived in the community long enough to know whether it had changed. Moreover, while color and transparency changes can be observed in regionally stationary air and surface water, rivers and air currents can shift pollution away from its source and thereby divorce the pollution from an obvious source or explanation. In Wuhan, for example, an interviewee queried about the consistently heavy smog explained that the smog was merely low cloud cover—that since there were no coal plants nearby, there could not be any air pollution (Interview 2011091301). Additionally, the changes that occur in less visible environmental media do not lend themselves to casual observation: a villager without specialized knowledge of soil is unlikely to note changes in soil color or texture, while any color shifts in ground water would only be infinitesimal in the amounts pumped up from wells for drinking and irrigation, and therefore imperceptible.

Effect attribution: Quite apart from pollution's visibility or observability, its effects can serve as an indicator of hazardous environmental change. Such effects might be observed in the environment or among the human population, and their efficacy as indicators depends on whether they can be connected to pollution and on the relative explanatory power of alternative explanations. Ecological shifts, such as changed organism populations, genetic mutations, and non-visible resource pollution, are pollution effects that villagers can observe when those ecological shifts impact their livelihoods by affecting the ecosystem upon which they depend. Fishing communities will know when fish populations drop precipitously, or their catch suddenly

includes morphologically atypical fish (like those missing eyes or exhibiting extra fins that can be bought in the market on the northern shore of Yilong Lake). Farmers can observe that crops that have previously thrived now fail under ideal cultivation conditions, and blame pollution for the change. Among the human population, health effects might not be easily attributed to pollution due to myriad alternative explanations, or because of a long lag time between pollution exposure and disease onset. However, some health effects are attributable, such as rashes or skin lesions that appear after swimming in a lake or river. Cancer has also served as an indicator. The various forms of cancers have a wide range of causes that occur in human populations at low rates, including inherited genetics and spontaneous mutations. However, environmental factors can cause the rates of certain rare cancers to increase exponentially within a community, such as when water pollution leads to widespread esophageal or tongue cancer. Such a disease effect can be attributed to local pollution even among relatively uneducated and uninformed villagers, such as those interviewed in a "cancer village" on Qilu Lake.

Pollution source: Source type, and the strength of the link between the source and consequences, impacts pollution measurement. Non-point-source pollution, such as run-off from agriculture or mining operations or regional air pollution, can be far more elusive indicators than point-source pollution that clearly and directly connects to the polluter, as when a pipe pumps effluent directly into a river or a truck dumps hazardous waste just off a major road. If villagers can witness the polluting act, they know that pollution has occurred. In other cases, the polluter may simply act suspicious. Local Environmental Protection Bureaus (EPBs) are chronically understaffed and underfunded throughout China (Economy, 2011; Stern, 2013). And although

Yunnan values environmental protection relatively highly, the province's local EPBs also lack funding and staff. When a fertilizer factory polluted Yangzong Lake with arsenic, most villagers lacked the measurement methods required to detect the lake's contamination. There was no change in water color, the pollution did not occur during the main fishing season, arsenic does not cause a rash, and the period of time between pollution and the local authorities' intervention was too short for other health issues to emerge. Nevertheless, villagers in two adjacent communities on the southwest shore of the lake and across a shallow cove from the factory learned about the pollution immediately. Not only could they see the waste as it was pumped into the lake, but because the local EPB official travelled through these villages to monitor compliance, the villagers knew the pump was only turned on at night and never immediately before the EPB official's scheduled inspection. If the waste was not toxic, it would not have mattered when the pump operated, so therefore, it must have been pollution. Moreover, not only can the source type or location affect awareness of less visible pollution, the absence of a potential source can actually inhibit verbal acknowledgment of visible pollution. In the survey data, a general query about pollution's consequences yielded eleven responses that pollution only came from factories, and when there were no factories, there could be no pollution.[56]

There is a limit to how much information these types of measures can provide about environmental damage and pollution's effects, however. With the exception of catching the polluter in the act, as the villagers did at Yangzong Lake, the pollution often remains unnoticed until it becomes quite severe. A change in the color of lake water, or heavy smog so consistent

[56] HEPS data, question L10.

that it cannot be fog, indicates critical levels of pollution and environmental damage. Consequently, any remedy will likely require complex methods and a hefty financial investment, that is, if remedy is even possible. For example, crop failure from heavy-metal contamination might only be solved by abandoning the contaminated land. Health effects may provide more timely notice if they result from an initial and brief exposure, but pollution-related illness is often caused by repeated exposures over time. Either way, remedies might be limited and are unlikely to cure the health problems caused by the pollution. These factors reduce the potential for successful remediation efforts that follow villagers' observations of a pollution problem; by the time it can be observed by villagers, successful remediation is rendered unlikely because of three possible negative outcomes: (1) the remedy is judged too costly, thus discouraging state action; (2) the state wants to address the pollution, but lacks the capacity to do so; or (3) the damage is irreversible, and nothing can be done.

2. Particularized Characteristics

Pollution attribute variables are objective, but how individuals assess the risk of pollution is not: individuals perceive the meaning of those variables through a frame of particularized characteristics that give meaning and magnitude to environmental change. When studies found that pollution perceptions varied widely even when pollution levels were consistent, the variation was initially attributed to differentiated access to pollution data; in other words, a group's perceptions about pollution levels and relative risks is determined by its access to pollution data. Furthermore, it was reasoned that the variation observed within groups with the same access facing the same objective measures must be due to demographic variables, such as education or

age (Byrd, VanDerslice, & Peterson, 1997; Van Liere & Dunlap, 1980). However, these variables failed to account for perceptual phenomena like the "neighborhood halo effect," also called the spatial bias, whereby individuals rate pollution levels in their own neighborhood well below pollution levels elsewhere, regardless of objective measures (Brody, Peck, & Highfield, 2004; Bush, Moffatt, & Dunn, 2001; Francis, 1983). Other socio-cultural variables, such as an individual's relative social or economic power, also had a measurable impact on the individual's perceptions of pollution (Bickerstaff, 2004). Environmental risk perception scholarship has increasingly found that measures of pollution might be objective, but the risks posed by pollution are viewed through personal "beliefs, attitudes, judgements and feelings, as well as the wider cultural and social dispositions" (Pidgeon et al. 1992:89). Because individuals cannot separate perception of pollution severity from the risks it poses, such perceptions are rendered subjective.

Personal Impact: This is the degree to which perceived pollution affects or could affect an individual's life. Members of marginalized groups, who have "less power and control [and] benefit less from many technologies and institutions" are more vulnerable to negative outcomes and "therefore see the world as more dangerous" (Finucane et al., 2000:170). As such, potential effects to health and livelihood, whether to the individual or to those the individual protects, such as children or other family members, may be magnified. Young children are especially vulnerable to pollution's effects because their systems are still developing and they generally have a much lower body mass index. Consequently, heavy metal pollution or $PM_{2.5}$ airborne particles may not affect adult health, while causing developmental problems and other long-term damage in children. Those with attachment and commitment to a locality are less likely to admit

pollution because they are invested in perceiving their neighborhood in positive terms, whereas those without such attachment are more likely to be critical (Bickerstaff & Walker, 2001; Walker et al., 1998). There is an alternative explanation, however, that generates the same acknowledgement pattern among villagers in China: those who are unable to leave a locality, because they lack the means or permission to do so, are also less likely to acknowledge the risk than those who are more mobile.

Personal/Internal Efficacy: To what extent does an individual feel competent to process information and form opinions, even if those opinions do not align with those expressed by other actors, particularly more powerful actors? Individuals with strong personal efficacy "feel they understand how to take part in politics, and are not intimidated by the challenges, conflicts or disagreements that occur in that arena" (Valentino et al., 2009:308). In several interviews during the HEPS survey, enumerators noted respondents were explicitly dismissive of their own competence to answer the question. Marginalized groups—those with low incomes, members of ethnic minorities, and in some cases, women—who may feel helpless in their daily lives have a diminished sense of competence and may have severely reduced expectations, both for what they deserve and what they might accomplish. These feelings can contribute to the choice not to act. In interviews conducted among low-income households in the United States, Sandefur (2007) found low personal efficacy is strongly associated with the failure to act among those with justiciable grievances, many of whom had a heightened sense of risk and extremely diminished expectations overall. In some cases, interviewees had such low opinions of their relative position and competence that they expressed gratitude for even severely deteriorating conditions

(Sandefur, 2007). Personal efficacy thus can be assumed to affect the relative weight given to potential environmental risks, versus the risks and incentives associated with taking action.

Education/Information Access: Education affects risk assessment in three ways. While it obviously provides more knowledge to the individual, it fosters the skill to accumulate and process new information once schooling has ended. Third, by contributing to personal efficacy levels, education shapes how one orders new information. Both the second and third ways are also factors in information access. While physical proximity to an information source facilitates access to it, information access is also a matter of how one absorbs certain types of information, and of exercising judgment to filter through sources and data whose validity may vary. For example, if pollution has caused high rates of cancer, massive crop failures, or the collapse of the fish population, the effects and future risks are concrete and critical. However, when communities are notified about pollution that they themselves cannot observe, they depend on information from outside sources to estimate risk. In Mingjucun, a village on Yangzong Lake, many villagers were unsure about the potential risks after the government gave notice that the fertilizer factory had polluted the lake with arsenic. Their uncertainty stemmed from the nature of the government's notification: the villagers were only told not to drink directly from the lake or eat fish from the lake, not what the consequences would be if they did so. Since the immediate damage to their livelihoods was clear, and the consequences for their health were ambiguous, many villagers prioritized the certain risks over the uncertain risks. From a pair of boats 20 feet off shore, two fishermen sorting their catch acknowledged to me that they often drink lake water when they are out fishing, despite the prohibition on both activities.

3. Perceived Risk of Specified Response

Political Efficacy/Institutional Trust: "What does 'pollution' mean? There is no way out, anyway."[57] This sentiment was a common refrain among those interviewed and illustrates how the primary incentive to seek remedy, i.e., the expectation that the problem could be solved, is significantly discounted by the perceived improbability of such a solution. What then would be the point in acknowledging the pollution? Political efficacy refers to an individual's belief in the responsiveness of state actors and institutions, "regardless of whether or not they are willing or able to apply that pressure themselves" (Valentino et al. 2009:308). In other words, political efficacy has significant overlap with institutional trust, where institutional trust measures an individual's trust in the competence or effectiveness of a given institution to serve its expressed function, rather than the trustworthiness of institutional intent. Lack of institutional trust inhibits political efficacy, diminishing the belief in the potential for meaningful political action (Walker et al., 1998).

Contextual political, social, and economic factors: These factors can range from positive interests in denying pollution, such as connections to the polluter, to fear in naming it, which could stem from coercive local politics. Alternatively, other factors, such as frustration or anger with political or economic circumstances, might drive the motivation to name, overpowering any sense of risk associated with naming. Here is where political risk can have the greatest direct and

[57] "*You meiyou wuran…shi shenme yisi? Meiyou banfa."* Seven interviewees used this exact phrasing, and twenty-three others used highly similar phrasing when asked about pollution. In the HEPS survey, enumerators noted respondents making similar statements during the environment portion of the questionnaire in nine cases.

observable impact on naming pollution as well as on other responsive actions. The impact can be positive or negative. For example, an individual may have political or economic interests in denying pollution. In Jicun, villagers and village leaders were politically aligned against an external polluter, cooperatively moving against a large chicken farm operation that disposed waste into the irrigation trenches used for Jicun's fields.[58] The reluctance of villagers in Ercun to acknowledge pollution in Qilu, as discussed earlier in this chapter, illustrates how economic risk can shape naming, but also shows possible political dimensions as well. If the villager is employed by the polluter or is personally complicit, he or she has an interest in discounting the pollution. An employee might fear particularized reprisal or might want to protect his or her job by shielding the employer from scrutiny. Only one villager would consent to be interviewed in Wushengcun, the village immediately adjacent to an aquaculture factory, because other villagers feared that I was a company spy.[59] When the villager is a polluter, there is clearly incentive not to admit there is a problem. Of the five lakes in Yunnan, three were heavily polluted by agricultural run-off from the farms surrounding the lakes. In other words, a significant portion of pollution was caused by the villagers themselves.

IV. Why Villagers Name Pollution: Testing the Model's Implications

In this section, I use the HEPS data to test the implications of the model elaborated above. In Table 4.1, I list the model constructs, the corresponding variables from the dataset, and

[58] See Chapter 5 for a more in depth description of the dynamics in Jicun's grievance process.

[59] Mr. Pa, the sole villager interviewed, explained the other villagers' suspicions, but only after examining my passport and American university credentials, and quizzing my field assistant.

the predicted relationship between those variables and the dependent "naming pollution" variables.

Table 4.1. Expected Direction of Association: Risk Model Constructs and Naming Pollution

		Local pollution is a problem	Quality of natural resources	Air quality
Perceived Personal Risk				
Political efficacy	Has brought a claim in court	+	-	-
Institutional Trust	Local courts are unjust	+	-	-
Contextual Political Factor	Pollution perception differential from village leaders	+	-	-
Particularized Characteristics				
Personal impact	Has a minor child	- / +	- / +	- / +
Personal impact	Bias against admitting local pollution	-	+	+
Personal efficacy	Has right to critique the government	+	-	-
Education	Level of education	- / +	- / +	- / +

1. Dependent Variables. I use three dependent variables in tests of why respondents name pollution: (1) how much local pollution is a problem; (2) a composite rating of natural resource quality; and (3) the air quality rating. For the local pollution problem, a high number indicates a severe problem, whereas for the quality ratings, a high number indicates a clean environment. The possible range for all three variables is 0 - 10.[60] I use these variables in order to tease out how significant the difference might be between a generalized environmental assessment and a

[60] For air, soil, drinking water and surface water, 10 indicates high environmental quality and 0 poor quality; for local pollution, 0 indicates no problem and 10 a severe problem.

resource-specific assessment. I use two quality ratings in order to test how much a diffuse but visible pollution vector compares to a composite rating, which combines ratings of drinking water, surface water, soil, and air in an additive index.

2. Particularized Characteristics. I use the following variables to correspond to the model constructs: (1) having a minor child and a bias against admitting local pollution are personal impact factors; (2) level of education reflects education and information access; and (3) whether the respondent feels he/she has a right to critique the government measures personal efficacy. The bias variable is the difference between the respondent's assessment of the local pollution problem and his or her assessment of the national pollution problem; positive values indicate a bias toward discounting local pollution problems, while negative values indicate an evaluation of local pollution as more severe than that in China generally. Because previous research shows a bias against admitting local pollution is related to personal views of one's community, it is a personal impact variable (Bickerstaff & Walker 2001; Walker et al., 1998). I expect personal impact variables to have mixed (and different) effects: I expect having a child magnifies the perceived environmental risk, the perceived political risk of naming pollution, or both; however, I expect the bias against naming locally is consistently negatively associated with naming local pollution problems and positively associated with both resource quality ratings. I expect personal efficacy to have a positive association with local pollution naming, and a negative association with the quality ratings because personal efficacy is the sense of competence in one's own knowledge and skills. I expect mixed results for level of education; while education leads to

awareness, and thus acknowledgement, it can also indicate greater individual investment in the system and the status quo.

3. Perceived Risks. I use the following variables to correspond to the model constructs: (1) whether the respondent has brought a claim in court is a measure of political efficacy; (2) the degree to which the local courts are perceived unjust is a measure of institutional trust; and (3) the pollution perception differential between the respondent and her/his village leaders is a measure of a political contextual factor. The pollution perception differential is the absolute value of the distance between the villager respondent's environmental quality rating and the averaged ratings given by the village leader respondents from the same village. I use this indirect measure of perceived risks to investigate the degree to which a respondent's view differs from the prevailing local official assessment, whether positively or negatively. If a villager rates environmental quality very low while his or her village rate it highly, the villager is demonstrating his/her willingness to express critical views, even when those views diverge from the official assessment. However, if a villager rates environmental quality highly when his or her village leaders assess it in strongly negative terms, the view divergence can still indicate willingness to be politically contentious. I therefore expect the pollution perception differential to have a positive association with local pollution naming and a negative association with the ratings of resource quality ratings. I expect having brought a claim in court to be positively associated with local pollution naming and negatively associated with ratings of resource quality because to bring a claim reflects significant political efficacy. Finally, I expect a perception of local courts as unjust to be positively associated with local pollution naming and negatively

associated with the ratings of resource quality because institutional distrust can lead to alternative forms of public participation and because willingness to voice a negative view of local institutions is likely to match a willingness to name pollution.

4. Control Variables. I control for sex, age, income, ethnic minority, and CCP membership, and an unspecified bundle of county-level effects. Controlling for county-level effects also controls for general pollution conditions: counties are sufficiently small that the level of air pollution, which is generally relatively diffuse anyway, is close to constant across all villages within the county.[61] County-level fixed effects also likely control for the composite quality of natural resources rating. Age and income help to control for age-related risk perception effects (see, e.g., Anderson, 2007), information access, cultural shift effects (between generations who have experienced different political environmental standards), and environmental perspective (i.e., those who can remember better environmental conditions).

In Table 4.2, I present the results of OLS regressions with county-level fixed effects.

[61] In order to confirm this pattern, I mapped average air pollution range for each county in February 2015 (see Appendix E). Village- and county-level data are not consistently available for earlier years. Winter heating has consistently produced approximately 60% of $PM_{2.5}$ levels across the heating period, November to February (Q. Xiao, Ma, Li, & Liu, 2015). Given that drift from urban centers, wind patterns and other environmental features such as land topography will create highly similar conditions, air pollution patterns in 2015 are a valid proxy with which to estimate the February 2012 patterns when we conducted the HEPS Survey.

Table 4.2. OLS Model of Determinants of Naming

		Local Pollution			Natural Resources Quality			Air Quality		
		1	2	3	4	5	6	7	8	9
Perceived Personal Risk Factors										
Political efficacy	Has brought a claim in court	1.097** (0.55)		0.725 (0.51)	-0.978** (0.49)		-1.110** (0.57)	-0.494 (0.45)		-0.398 (0.52)
Institutional Trust	Local courts are unjust	0.352*** (0.05)		0.299*** (0.04)	-0.040 (0.04)		-0.043 (0.05)	-0.059 (0.04)		-0.057 (0.04)
Contextual political factor	Pollution perception differential from village leaders	0.205** (0.10)		0.233*** (0.09)	-0.219*** (0.09)		-0.251*** (0.10)	-0.152* (0.08)		-0.162** (0.09)
Particularized Characteristics										
Personal impact	Has a minor child		-0.275 (0.21)	0.033 (0.23)		-0.421** (0.22)	-0.479* (0.26)		-0.400** (0.20)	-0.522** (0.24)
Personal impact	Bias against admitting local pollution		-0.686*** (0.04)	-0.643*** (0.05)		0.148*** (0.04)	0.140*** (0.05)		0.189*** (0.04)	0.183*** (0.05)
Personal efficacy	Has right to critique the government		0.868*** (0.24)	0.930*** (0.27)		-0.145 (0.25)	-0.241 (0.30)		-0.120 (0.23)	-0.240 (0.27)
Education	Level of education		0.055 (0.12)	0.050 (0.13)		-0.032 (0.12)	0.137 (0.33)		-0.289*** (0.11)	-0.213 (0.13)
	Constant	3.544** (1.75)	6.106*** (1.41)	5.540*** (1.80)	1.348 (1.56)	0.196 (1.40)	-0.029 (2.03)	4.599*** (1.51)	7.403*** (1.31)	5.750*** (1.84)
	Adjusted R^2	0.280	0.483	0.548	0.136	0.136	0.153	0.114	0.115	0.147
	Observations	435	478	360	439	490	360	391	485	358

*p<0.10, ** p<0.05, *** p<0.01

Note: Demographic controls and county-level fixed effects in all models, sample drawn from 27 counties. Demographic controls are: sex, ethnic minority, and CCP member, parent of a minor child, age, age^2, income and education. Variable descriptions in text, summary statistics in Appendix D.

Models 1, 4 and 7 use only the perceived personal risk variables, whereas Models 2, 5, and 8 use only the particularized characteristics variables, and Models 3, 6 and 9 include both. Overall, the results support a model that frames "naming" pollution as political act. They confirm expectations regarding all particularized characteristics and perceived personal risk constructs, with the exception of having a minor child and education. Having a child does increase personal impact for the ratings of resource quality, but does not increase a corresponding sense of political

risk. Education, which is considered to be a very significant factor in pollution awareness in the literature, is only significant in one model. This suggests either that among villagers, the pollution is so evident that specialized knowledge is unnecessary, or alternatively, that naming pollution is not strongly connected to the real level of pollution, but instead reflects other factors, including the political and personal dynamics I discuss here.

V. Conclusion: Why the Choice to Name Pollution Matters

Villagers in rural China are facing severe, immediate and harmful pollution. Their health and livelihoods will continue to deteriorate along with the environment unless something is done. But what can be done, and who will do it? While the CCP leadership has made some efforts to address the crisis, these efforts are largely ineffective at preventing further environmental damage overall. Any small successes are certainly not felt among the rural population, and often policies that solve urban problems are likely to result in greater damage in rural areas. Environmental NGOs are allowed to participate, and the new Environmental Public Interest Law may increase the efficacy of NGO efforts, but their impact is still limited. In the end, unless villagers take some sort of action on their own, nothing will be done. Unfortunately, even if they were to take action, they have little hope of having an effect. Low socio-economic status, limited access to information, lower levels of education and being geographically removed from potential resources puts significantly disadvantages villagers. Choosing to take action is rendered even less palatable by the potential risk involved. Reporting pollution, making a claim, pursuing a grievance through the petition system and going to the media all pose some degree of perceived political risk, and as a generally marginalized group, they are more likely to experience

repression. Though many of them do take action in a variety of ways, including naming pollution, many do not—in some cases, unwilling even to acknowledge drastic and dangerous environmental change when it is undeniable.

This chapter seeks to identify some of the factors that affect these choices. Focusing on the choice to name or not to name pollution restricts the number of variables that can play a role—it is not about legal consciousness, which I address in Chapter 3, and it is not about institutional and political trust, which I address in Chapter 5. The action to acknowledge pollution takes no physical effort and costs no money. My research suggests that villagers' voicing of their environmental risk assessments may be inhibited by a combination of two different considerations: (1) the perceived environmental risks to their health and livelihoods of remaining silent; and (2) the perceived political risks of naming. The current approach to environmental risk perception analysis fails to recognize and account for those effects so readily apparent in rural China, and likely in other politically restrictive regions. These findings suggest a need for analysis that specifically considers the effects of political risk on how people express environmental awareness. They also illustrate the value of disaggregating awareness of pollution and verbal acknowledgement of pollution, not only in politically restrictive environments, but more broadly when conducting research among marginalized groups, for whom personal or political efficacy are relevant and significant factors. Moreover, since pollution-responsive behavior affects policy outcomes, these political and personal factors are pertinent to questions of policy design.

Explicit official and mass public recognition of pollution, environmental protests, environmental litigation, and environmental regulations are all increasing rapidly in China. But

when placed in the context of the population and severe environmental deterioration, these numbers are still very low.[62] Action is only the tip of the iceberg—or pyramid. Through this project, I endeavor to shed light on the perspectives of those that do not reach that far—more than 600 million rural Chinese who have few choices between the environmental crisis and the authoritarian state. There is a powerful argument for expanding individual-level environmental political analysis beyond conspicuous or formal actions.

In summary, this chapter illustrates part of the process through which villagers respond to pollution. Villagers balance paying the costs of the environmental crisis with taking political risks for uncertain outcomes with a range of complicated and interactive political, economic, and personal factors. The central government should take these factors into consideration in any efforts to elicit real public participation.

[62] See Chapter 2.

5 SEEKING THE EMPEROR:

ENVIRONMENTAL AND POLITICAL EFFECTS OF TRUST IN THE CENTER

天高皇帝远。*Heaven is high, and the emperor is far away.*

Chinese Proverb, dated to the Yuan Dynasty (1271-1368)

I. INTRODUCTION

"If [the central government] knew, they would help. That is why we are trying to tell our story to the media. We are hoping someone will hear."[63] Jicun, a village on the north shore of Yilong Lake, has an animal waste problem. To the west, there is a large chicken farm, and the waste travels down a sluice into the irrigation system for the village instead of into the lake, as the villagers would prefer. The village leaders organized the community's efforts to address the issue and has sought help through several channels without success. The farm owner has a good relationship with county officials, according to one village leader, who protect the owner's interests. The county court has stalled, and each time the village has tried to file a suit, they have been told to bring additional documentation or go through a different office. They submitted a petition to the Letters and Visits office, but there has been no response yet. The village leaders have gathered a large file of photos, property plats, a list of all the actions undertaken to remedy the dispute and their results, and carefully written accounts from villagers whose farms have

[63] Interview 2011071104.

been most affected.[64] By the time I arrived in the village, the community had very little regard for local government institutions. Nevertheless, after sharing their story, they asked if I would take photos of the file and all the documents back to Kunming and bring them to the attention of the news media. One village leader explained that he knew that the central government "heavily emphasized environmental protection," so pollution should be an important issue to publicize in the news. If reporters in Kunming ran with the story, they could attract national attention, maybe even from officials in Beijing.[65] While they distrusted the competence and motivations of local officials, the villagers expressed faith that the central authorities would resolve the dispute in their favor.

This chapter expands upon Chapter 4 by focusing on the individual decision to take action beyond naming as a pollution response and by exploring how state practice and policy shape these decisions. I also consider how these decisions might have broader implications for the state's environmental governance strategy overall. As argued in Chapter 2, public participation as a monitoring mechanism could likely environmental governance, but such participation requires sufficient opportunity and incentive. Macro-level policies from the center can create opportunities, but decentralization means implementation depends on local governments. As already discussed, local governments have little incentive to foster the development of public participation institutions, and often have a greater interest in discouraging

[64] Photo of documentation on file with author.

[65] Photos of the file and contents were taken only after full disclosure of author's background, and clear refusal to engage with the media on the village's behalf. The villagers insisted photos be taken nonetheless, and one suggested the photos be shared with the U.S. media.

participation.[66] This conflict creates risk for individuals that might seek remedy for pollution in their communities, and the degree of perceived risk depends on how much trust they have in the institutions and the state. But the state in China does not function as a monolith, and previous research has established that Chinese citizens accordingly express varying degrees of trust across levels of government and institutions. If the designated institutions do not prove attractive as options for remedy, and the issue needs a solution, why not seek a solution from a more trustworthy source? This pattern can be observed in Jicun, where differences in trust in local institutions and central authorities influenced the community's decisions. Despite the failures of local government and institutions, villagers believed that the central leaders cared about environmental protection, and so they would care about the pollution occurring in Jicun if were aware of it. They had sought to use the sanctioned dispute mechanisms and, when rebuffed or disappointed, had looked for another way. While local government failures apparently had little effect on perceptions of the center—the emperor is not responsible for far-away failures, but can still be depended upon for the remedy if informed—those failures did affect the villagers' view of local institutional utility, thus setting them on a path outside the sanctioned channels. If institutional failures increase the probability of extra-institutional actions, trust in the center may only influence the tenor of extra-institutional action (a potential source of political instability)—how villagers seek to communicate with the distant emperor—rather than inhibiting such action altogether.

The choice to engage or not to engage with state institutions in response to pollution is affected by perceptions of those institutions. At the same time, such choices can impact

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institutional development and performance through the degree and manner of citizen engagement. This circular relationship has proven a somewhat challenging puzzle for researchers seeking to identify causal mechanisms. Despite a wealth of research on trust and institutions, there is a divide between institutional theory, whereby trust is an endogenous variable reacting to perceived institutional performance, and cultural theories in which trust is exogenously formed through socio-cultural norms, shaping an individual's institutional expectations and the manner and scope of institutional engagement, thus influencing the institution itself (Levi & Stoker, 2000; L. Li, 2013; Lu, 2014; Mishler & Rose, 2001; North, 1990). Further muddying the waters, political trust in China diverges from patterns found elsewhere in three significant ways. First, trust in the center exceeds trust in local government; in other places where differentiated trust has been observed, trust in local government is found to be higher than is trust in national government (Jennings, 1998; Levi & Stoker, 2000). Second, repressive state behavior does not seem to diminish political trust, nor has trust in the central authorities appeared to have deteriorated over time, in contrast to other non-democratic states that suffer from very low levels of trust stemming from acts of political repression necessary for regimes to maintain control (T. K.-Y. Wong, Hsiao, & Wan, 2011). Third, the CCP employs institutional tools to maintain trust, such as the petition system that specifically encourage citizen feedback—feedback that often includes critiques of lower levels of government (Dimitrov, 2014).

In this chapter, I use the HEPS survey data and the qualitative data from Yunnan's lakeshore communities to evaluate the role that political trust plays vis-à-vis institutional function within the context of environmental disputes and to query what trust, as analyzed through these data, really signifies for regime stability and legitimacy. I find that perceived

institutional performance has contradictory and differentiated associations with political trust in different state institutions and levels. I also find that trust in the center does not decrease the likelihood that villagers will protest, but instead has no effect or even increases the likelihood of protest, particularly when villagers distrust local institutions. The enduring belief that the central government is sympathetic inspires villagers to use whatever means necessary to plead their grievances to it. If the local mechanisms are found lacking or dangerous, they may very well choose extra-institutional action, which is precisely what the center has sought to discourage. Furthermore, the perception that extra-institutional action is a legitimate course can undermine institutionalization, thus damaging any potential claim to institutional legitimacy and the prospective efficacy of any policies that hinge on that institution. As argued in Chapters 2 and 3, improving environmental policy and governance hinges on regulatory structures that are systematized and institutionalized, and not compartmentalized and fragmented like China's regulatory structures, and environmental outcomes could be considerably affected by deteriorating institutional performance.

This chapter is organized as follows. In Section II, I lay out my theoretical arguments, and frame them within the context of the existing literature on generalized, political, and institutional trust and the relationship among trust, institutional function, and political engagement. Section III looks at trust in China, how it is studied and how it is measured. I then present the data and analysis on trust, institutions, and public participation. The discussion of methodological issues follows in Section IV. In Section V, I discuss the implications for environmental governance strategy and political stability, suggest potential directions for further inquiry, and conclude.

II. Political Trust, Institutions, and the Public Participation Mechanism

The story of Jicun illustrates how trust, institutions, and public participation can interact in a variety of ways and just how complex that interaction can be. The villagers' distrust in the local officials, and their failed efforts to seek resolution through the court system, meant that they needed to look elsewhere for a solution; trust shaped institutional engagement and was also affected by the outcome of that engagement. The choice to seek media attention showed trust not only in the central government's ability to solve the problem, but in the central government's intentions to help them and not to punish them for active participation outside the local politically-sanctioned channels. Moreover, the choice to engage or not engage with legal institutions, as we see in this case, is a function of how those institutions are regarded and how they are trusted. If villagers do engage, the manner in which they engage is also entwined with variables of trust—how hard they push for a preferred outcome, whether they assume the legal system officials are corrupt and therefore seek to bribe them, if they trust the lawyers and judges to cleave to the rules, and whether they accept perceivably unjust outcomes because they fear the political consequences of rejecting them. Trust thus shapes institutional development and performance through the quality and quantity of public participation or engagement, and impacts the institutionalization process.

A. The Value of Political Trust

What is political trust in rural China, how do we measure it, and how can we ascertain its power as a variable in political behavior? In the simplest terms, trust is the choice of one individual to make himself or herself vulnerable to another (Castelfranchi & Falcone, 2010). It is a relational phenomenon that assumes some level of risk gauged acceptable by the trustor (Kramer & Tyler, 1995). The scope, nature, and limits of that vulnerability, and therefore the risk, depend upon the relationship between trustor and trustee, as well as the characteristics of the trustor and trustee that affect the development and maintenance of that trust. There are many versions of trust in political and social analyses. Interpersonal or particularized trust is finite and specific to those individuals with whom the trustee has interacted: direct experience or knowledge shapes the decision to trust (Stolle, 1998; Tan & Tambyah, 2011). Generalized trust, also known as social trust, is the expectation that most people share similar values and can therefore be trusted to make choices in a predictable way (Uslaner, 1999). Social trust features in Putnam's well-known "social capital" argument: social trust is a feature within civic groups or communities, and that the greater the social capital, or the more that control is ceded through social trust to the larger community, the lower the social and economic transaction costs (Putnam, 1993, 2001).

Political trust is the belief that the state institutions and agents will serve citizens' interests. It is similar to generalized/social trust because trustors must trust individuals, groups, and institutions that are beyond their ken, but it differs in two important ways. First, there is an authority differential between trustor and trustee because the state can assert control whether the individual chooses to trust or not. This alters the nature of the choice to trust, the variables that influence trust quality and quantity, and the consequences of that trust. Second, the state is a

hybrid of people and institutions, which are the "prescriptions that humans use to organize all forms of repetitive and structured interactions" (Ostrom, 2005:3). In other words, the state is already composed of formal relational phenomena designed to reduce risk in interactions for which generalized trust is deemed insufficient.

When scholars have sought to operationalize and measure generalized trust as a causal mechanism, they found it lacked explanatory power (Kim, 2005; Nannestad, 2008). By reframing the trustor's risk analysis as an assessment of the trustee's motivations distinct from his or her capacity to take the preferred action, however, trust was found to have greater significance in some studies (Levi & Stoker, 2000). This distinction between an actor's motivations and capacity can be significant in political trust analysis as well. It has been expanded from the motivations and capacity of individual trustees to the motivations and competence of state actors to function according to the normative design, as well as to measure trust in institutions to enforce human action (Kaase, 1999; Schyns & Koop, 2010). Perceived trustworthiness can be more (or less) significant than the trust that an institution will work as expected or that it will serve the public interest (Levi, Sacks, & Tyler, 2009; Lu, 2014).

In both new democracies and non-democratic states, research has found a strong relationship between regime type, stability, and the degree of trust citizens express in their government. Trust levels in non-democratic states are consistently low due to the state's tools to maintain political control; although political transitions can generate initial optimism in the general population leading to an increase in trust, trust drops again when the regime moves against its citizens, as it is certain to do, in order to establish control (Mishler & Rose, 2001; T. K.-Y. Wong et al., 2011). Trust levels in new democracies also tend to be low initially. As with

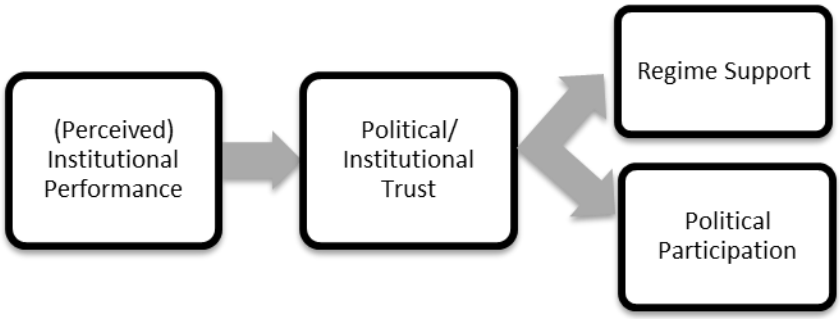
regime change in non-democratic states, the transition may be accompanied by a temporary spike, which can drop in response to poor institutional performance, while positive change in trust levels reflects increasing democratic consolidation in new democracies. In both regime types, political instability is far more likely when trust is low, which creates incentive for even non-democratic states to pursue policies designed to increase or sustain political trust. That being said, a non-democratic regime's commitment to such policies is determined by the perceived costs to political power of those policies. In China, the balancing game between legal institutionalization and the discretion of political elites exemplifies this calculation. As discussed in Chapter 3, effective legal institutions are double-edged swords within an authoritarian state: they may contribute to state legitimacy and trust, but they may also contribute to political liberalization (Moustafa, 2014).

B. Institutional and Extra-Institutional Participation

Enjoying the trust of one's constituents has clear and direct benefits for the political elite in a democracy when trust can garner votes; however, it becomes harder to assess trust's precise value to state actors, institutions, or regimes. This ambiguity is readily apparent in much of the trust literature. For example, some studies will link trust to "regime legitimacy" or "regime support" in vague terms, but then fail to elucidate the mechanisms through which they are linked. In other studies, political trust is a jack-of-all-trades, fitting easily into to a variety of explanatory roles but resisting efforts to isolate a definitive and generalizable causal relationship between trust and institutions. Those endeavors to clearly specify the trust-institutions relationship have produced research adhering to either the institutional theory approach, or the cultural theory

approach, mapped out in Figures 5.1 and 5.2. The institutional theory, rooted in economic institutions literature, holds that individuals are rational actors responding to perceived institutional performance, and expressing trust depends on their evaluation of that performance. Political trust is therefore strongly associated with government performance overall (Mishler & Rose, 2005; North, 1990). In this context, change in trust has consequences for both public support of the regime, and the quality and quantity of public participation in institutions. In contrast, the cultural theory proposes trust reflects socio-cultural norms that shape an individual's institutional expectations. These expectations then influence the quality and quantity of the individual's engagement with the institution in question, which impacts the institution's role and function (Lu, 2014; Mishler & Rose, 2001).

Figure 5.1. Institutional Theory of Political Trust



Both theoretical models enjoy a wealth of supporting data and analyses across regions and within cross-comparative studies, but scholars testing these theories have increasingly found that causality can run both directions between political trust and institutional performance (Nannestad, 2008; T. K.-Y. Wong et al., 2011). While other variables may influence this

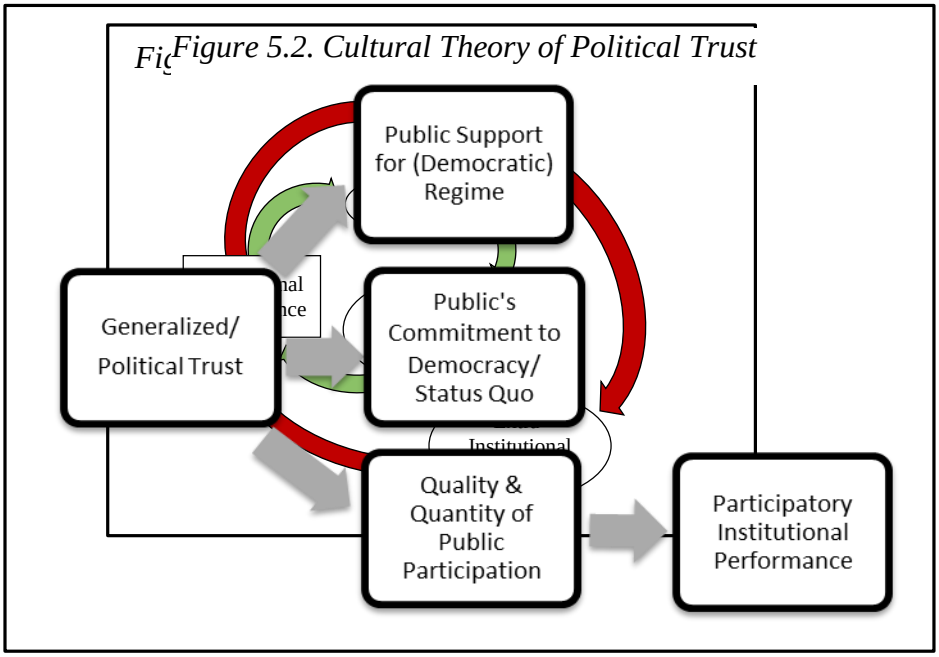


Figure 5.2. Cultural Theory of Political Trust

interaction, political trust operates as both a determinant and a corollary of how well an institution functions—a circular, rather than a linear, relationship. The key to this cycle is public participation, i.e., institutional engagement by the public, which features in both institutional and cultural theories (see Figure 5.3). In the institutional approach, the causal relationship is restricted to political participation, but because some institutions depend on public participation, trust, through that participation, can impact institutional performance. The cultural approach also

includes public action as part of the progression from trust to institutions, but fails to recognize that political trust in the state is not a static precondition but an array of variables that interact with political trust. Moreover, such trust also includes perceptions about the capability of the government to serve the public interest. These perceptions, in turn, are affected by previous experience with, or knowledge of, the consequences of institutional participation.

To summarize, the public's level of political trust toward an institution affects whether and how the public will engage with it, the method and level of engagement impacts institutional performance, and that performance will influence how well the public trusts the institution. In some cases, for example, distrust is found to lead to public participation outside government channels (Craig & Maggiotto, 1981; McAdam, Tarrow, & Tilly, 2003). This suggests that the level and quality of public engagement in one institution can affect and be affected by the performance of other political institutions, as well as the level of political/institutional trust.

Research testing the relationship among trust, participation, and institutional performance often generates contradictory findings about their causal relationship, because variation of definition and scope might shift the relationship from positive to negative, or even indicate no relationship at all. Some previous studies have suggested that increased trust yields increased participation, while other research found decreased trust led to participation (Citrin & Luks, 1998; Gamson, 1968; Inglehart, 1997; Shingles, 1981). Scholars seeking to resolve this contradiction have done so by using more nuanced specifications of both trust and participation variables, as well as by widening the scope of analysis to identify other determining factors. In another study, when trust in the state was distinguished from broad institutional trust, public

participation varied across different institutions and different levels (Nilson & Nilson, 1980).[67] The quality and quantity of participation affects institutional performance. If a citizen engages with a political institution and receives positive outcomes, for example, he or she is more likely to re-engage in the future and express positive perceptions about the experience, which improves the institution's reputation and encourages more users. Since increased or repeated use of institutional norms reinforces the consistency and transparency of those norms, increasing use rates may improve institutional performance. Alternatively, poor experiences can similarly worsen perceptions of an institution, resulting in lower use rates and negatively affecting performance. However, an increased rate of institutional use does not indicate improved performance, because the choice to engage involves a variety of contributing factors. For example, personal efficacy, a lack of alternatives, and presence of sufficient incentives have all been shown to contribute to institutional participation (Galanter, 1974; Gallagher, 2006; Gallagher & Wang, 2011; Hendley, 2013). Nonetheless, though institutional performance and institutional trust do not solely determine the extent to which individuals participate through those institutions, they do have an effect.

III. Trust, Political Instability and Institutional Fragmentation in China

The unusual trust levels that the general population expresses in China's national leadership were first measured in a 1993 survey, but additional surveys have confirmed this

[67] The trust-participation-institution cycle's convoluted array of variations and definitions can be discouraging to those seeking analytical clarity. Research that focuses directly on the causes and consequences of participation, for example, tends to neglect trust as an explanatory variable (Rosenstone & Hansen, 1993; Verba, Schlozman, Brady, & Brady, 1995).

phenomenon (L. Li, 2013; Shi, 2001). Initially, some scholars argued that the data were distorted by respondents' fear of political consequences if they expressed views critical of the government, but that argument was largely rejected when it was demonstrated that more politically sensitive questions yielded far more critical responses, even for respondents who confirmed their trust in the CCP leadership (Shi, 2001).[68] Other scholars proposed that trust reflected economic performance legitimacy—as the economy improved and quality of life increased, the high trust levels derived from the state's economic-institutional performance, such success taking priority over other institutional failures (J. Chen, 1999; Wang, 2005; Yang & Tang, 2010). The cultural theory, conversely, argued the high levels of trust were due to "Asian values," which emphasize the good of the many over the rights of the individual and a deference to authority rooted in Confucian traditions (Shi, 2001). This theory was useful for explaining initially high levels, but not the seeming unassailability of trust in the center over decades. As long as it remained steady, identifying potential causes and effects stemming from other variables was extremely difficult. Moreover, because scholarly research in China is restricted, there is a general paucity of in-depth

[68] In addition, though scholars have tested for the effects of perceived political risk on substantive responses and found low levels of correlation, the HEPS data show non-substantive responses (NSRs) at high rates for particular portions of the trust questions, potentially indicating a political risk effect. Rather than give an answer that could appear critical, respondents might provide a non-substantive response—either refusing to answer or stating they do not know—thus introducing a systematic measurement error. If true, political trust may not be as durable over time as it appears. In the HEPS Survey data, for example, 92.3% of respondents express trust in the center, an extremely high rate similar to those found in previous surveys, and the more local the level of government, the lower the rate of expressed trust among respondents: 84.6% trust the provincial government; 76.3% trust the local government; and 71.1% trust village leaders. However, these numbers only take into account substantive responses. Only 10.9% of respondents gave non-substantive responses concerning trust in village leaders, while 33.5% of respondents offered non-substantive responses concerning trust in the central government; as a proportion of all responses, trust in village leaders (82.3%) actually exceeded trust in the center (61.4%), and the differential among government levels was much less significant. We do not know how non-substantive response rates have changed, or what the underlying cause of that change is in those cases where scholars have reported NSRs--Shi (2001) reported 7.3% NSR rate on the trust in the center question from a 1993 survey. It may be that the refusal to explicitly express trust in the center does indicate changing political trust. See Appendix F.

studies using methodologically rigorous data, whether from large-n surveys or detailed qualitative studies, and almost none with panel data.[69] Given these data limitations, solving the trust puzzle in China is challenging.

Hierarchical trust—political trust differentiated among different levels of government—is more easily explained. Ordinary citizens have limited information about the central government, and what they do know is carefully curated propaganda: strategic public relations rhetoric about policy goals, such as fighting corruption, ensuring access to affordable health care, protecting the environment, and improving economic opportunity (Dickson, 2011). By contrast, their knowledge of and experience with local officials is based on real assessment of institutional performance. Because the center has delegated policymaking power to local governments, it can be insulated from poor governance at the local level (S. H.-W. Wong & Peng, 2015). Policy failures are attributed to the visible and immediate state actors, even when the failure might be due to the policy goal itself or the structural features of the state that inhibit effective implementation. When a policy causes hardship for a certain community, for example, or when a factory pumps toxic chemicals into the local water source with impunity, people therefore not only blame the local government and not the national government, but they also assume that the central leaders are unaware of the inadequacies or corrupt practices of local governments (Li, 2004; Hurst & O'Brien, 2002).

[69] See Carlson, Gallagher, Lieberthal, and Manion (2010), an edited volume that assesses and reviews methodological challenges faced by researchers in China and also includes scholars' descriptions of techniques used to adapt to these challenges. See Manion (2010) in that volume for a summary of methodologically rigorous surveys conducted in China, 1980-2009.

Though not generally a priority for non-democratic states, China's resilient authoritarian government maintains power by keeping tabs on popular views. The effectiveness of these strategies depends on the CCP leadership's ability to anticipate emerging sources of discontent and unrest by identifying those sources in public opinion patterns, but because speech is restricted, there are a limited number of channels through which public opinion can be accessed by the center. Local government reports are often unreliable—the CES imposes penalties for social instability, which creates incentive for officials to falsely report on local anger or dissatisfaction (Dimitrov, 2014). Instead, for information about public opinion, the center relies on the petition system (Dimitrov, 2014), the Internet and media (Stockmann, 2013), and the channels specified within the legal system (Diamant et al., 2005; Ip, 2012). Monitoring of extra-institutional activities such as protests or "mass incidents" is another source of public-opinion information, though limited in scope and size (Lorentzen, 2013). However, this source poses a high risk to stability (Lin & Liu, 2008).[70] Consequently, although protests are used to gather information, they are severely restricted by the state (Zhang & Zhang, 2009).

Since participation through a particular institutional channel is voluntary, the center must depend on public willingness to use the law or to petition in order to assess public opinion through those channels. That also means that the center is dependent on the extent to which citizens trust those institutions because trust affects the degree and method of participation. Since institutional performance is an important determinant of trust, the center has an interest in a well-

[70] Dimitrov (2014) explains that pre-1989 communist regimes in Eastern Europe analyzed protests in order to evaluate local government performance, but that permitting such protests contributed to regime instability and collapse. See, also, Bunce (2003).

functioning legal system and petition system, and in those factors that influence institutional choice. Encouraging the use of law and petitioning benefits the center in two ways: first, it yields greater information with which to assess larger patterns of discontent; and second, if law and petitioning are more appealing options for seeking remedy, extra-institutional action is less likely.

Nonetheless, the petition system has a problematic institutional performance record.[71] The process is opaque and inconsistent, complaints are often not addressed, and there is a high risk of repression. In 2009, Human Rights Watch published a report with interviews from over 50 former petitioners detained by the police. While in custody, they claimed, they had been tortured, beaten, starved, and in several cases raped repeatedly, in retribution for trying to communicate grievances about local problems through the petition system (Human Rights Watch 2009). While the Chinese government denied that the problem was widespread, they did execute a guard of one of the detainment centers for raping a detainee, a young girl (Branigan, 2012). A survey from the Chinese Academy of Social Science released data from a survey of 560 petitioners, of whom 70% witnessed increased oppression against petitioners, 64% had been detained, and 18% had been given sentences as a result of their petition attempt (Yu, 2008). In one study from 2004, of those petitioners surveyed, only 0.2% believed their complaints had been addressed adequately (Zhao, 2004). Individuals continue to file petitions at high rates, with

[71] The petition system, also known as the letters-and-visits (*xinfang*) appeals system, is an administrative agency through which a wide range of grievances can be processed. Petitioners send letters or visit the appropriate office for intervention and redress. Because many of these petitions concern conflicts with local officials, petitioners can visit higher-level offices, and can pursue redress progressively up to a higher level, all the way to the National Complaints Bureau in Beijing, where they receive petitions from all over the country. For more information about the petition system, see also Dimitrov (2014), Minzner (2006), and Li (2008, 2013).

total letters and visits increasing from approximately 4.8 million in 1995 to 12.7 million in 2005 (Buckley, 2007). Clearly, there are other significant factors that motivate public participation through petitioning besides institutional performance. That does not mean that trust is not still important—Li (2008) finds that trust in the *central government* makes citizens measurably more likely to file a petition. This means that trust in the center directly benefits social stability by yielding information and decreasing extra-institutional action initially; however, Li also finds evidence that the common experiences of local repression and poor outcomes lead to distrust for the center, and increase the likelihood that individuals will turn to "more disruptive and confrontational actions" (Li, 2008:222). In other words, trust in the center inspires petitioning, which may ultimately increase socially destabilizing actions. Furthermore, petition rates for environmental issues are dropping, as are the rates at which such petitions are processed (see Table 5.1). This pattern suggests that petitioning is becoming less palatable as a channel to address environmental problems, given that pollution has increased over the same period.

Table 5.1. Environment-Related Petitions in China, 2006 - 2012

	Total Visits	**Total Visits Processed**	**Total Letters**	**Total Letters Processed**	**Total Letters & Visits Processed**
2006	110,592	62,166			
2007	77,391	42,832	123,357	116,149	158,981
2008	84,971	40,748	705,127	660,665	701,413
2009	73,798	40,633	696,134	644,296	684,929
2010	65,948	32,887	701,073	654,833	687,720
2011	107,597		201,631		251,607
2012	96,145		107,120		159,283

The law system also has a spotty performance record. As reviewed in Chapter 3, legal development is highly compartmentalized and fragmented due to targeted legal policies from the leadership and the underlying political fragmentation of the state as a whole. The rapid regulatory expansion and uneven legal institutionalization has caused confusion among legal professionals and government officials, which has exacerbated the functional problems.[72] As argued in Chapter 3, legal consciousness among the general population is highly varied, with a persistent perception that law is the tool of the elites and thus cannot be trusted to serve the interests of ordinary citizens. Although there is less evidence of widespread political repression and abuse of litigants, there is still significant political interference in the less institutionalized or more politically sensitive sectors. In July 2015, 200 human rights lawyers and legal associates were arrested by the government, which accused the lawyers of being "venal con artists, sexual predators and foul-mouthed hooligans" (Jacobs, 2015). Claims against corrupt officials or polluting firms can lead to intimidation and arrest (Stern, 2014). There are also high barriers to entry, making it extremely difficult to file a claim or even have one formally processed for those without good connections, procedural expertise. The topic of a claim can also render it unlikely to be processed (e.g., addressing a politically sensitive issue or filing a claim against more powerful player). Making a claim is also very expensive. Another challenge for villagers is that courts are sparsely distributed outside of cities, and often the staff and judges are less qualified, with less education and experience (Liu, 2011).

[72] See, e.g., "A Judge Tests China's Courts, Making History," http://www.nytimes.com/2005/11/28/international/asia/28judge.html?pagewanted=all (last accessed November 16, 2013).

Research has found that experience with the legal system results in deeply negative assessments (Michelson & Read, 2011). As part of the absolute priority to preserve social and political stability, recent state policies have sought to deflect disputes away from the courts into the petition system or back to local mediation fora (Michelson & Read, 2011). Nevertheless, there is a steady increase in court cases overall. Institutional performance is less of a factor for institutional trust in the case of the legal system, largely because the percentage of those with experience remains small—even though the experiences are negative, such views have less impact on law's reputation overall. Instead, non-users tend to express some trust in the legal system and generally positive views overall, but they also indicate less familiarity, which can further discourage engagement.[73] So legal institutional trust may not be a significant indicator of whether citizens would use the legal system when seeking remedy. Is some other type of political trust significantly associated with public participation through the legal system?

IV. In Pursuit of Stability: Political and Institutional Trade-offs

Looking at Jicun, and based on the data I have presented in previous chapters, villagers' personal experiences with local institutions and their subsequent perceptions of those institutions clearly affect the choice to act in response to pollution. I have also shown how the manner and quality of public participation have implications for institutional performance, and how institutional performance can shape environmental governance. The story of Jicun suggests that

[73] In the HEPS survey, there was a high rate of non-substantive response on questions related to law. For example, when asked whether lawyers were trustworthy, 40.4% answered "Don't know," or "Refuse to respond" and when asked about court staff, 37.5% gave non-substantive responses; these were the second and third highest rate of non-substantive responses for that question, which also asked about the trustworthiness of 15 different groups, including government officials at various levels.

poor local institutional performance, combined with distrust for local government, may have broader consequences for social stability: having sought remedy through the available channels and failed, the villagers seek other options. This supports Li's (2008) findings that the choice to petition is associated with trust in the center, but poor institutional performance make the petitioner more willing to engage in extra-institutional action and trust the center less. In Jicun, villagers continue to express strongly positive perceptions of the central government, but that trust might wane in the future if no remedy emerges.

I use the HEPS data to clarify further the implications of the apparent trade-offs inherent in how the center structures political participation opportunities, and to estimate the political value of trust in the center. It is less important to explain how trust in the center remains so high if that trust has little effect on political behavior or outcomes. The data presented here identify and estimate the relationships among three set of variables: accessibility of the courts, trust in the center, and the likelihood that a respondent would engage in protests or demonstrations in the future. While not conclusive, the data and analysis do suggest certain dynamics among political trust, participation and institutional performance.

In Tables 5.1, 5.2, and 5.3, I examine the associations among trust in local government, perceptions about the legal system and legal institutional performance, trust in the center, and the willingness to engage in extra-institutional action. I also employ personal and political efficacy variables that serve as controls for respondents' view of their competence to take action, although they are also variables of interest in the later tables. All models have the same demographic control variables and county-fixed effects. To measure whether respondents perceived courts accessible to ordinary citizens, which is the dependent variable in Table 5.1,

and a variable of interest in Tables 5.2 and 5.3, respondents were asked whether they agreed or disagreed that "only wealthy people can use law and the court system." Disagreement indicated that they perceived the courts as accessible to non-wealthy individuals.

Legal experience is a combination of two variables: whether the respondent had ever gone before the courts, and whether the respondent had ever met court personnel. The former variable indicates formal legal experience. I chose to include a proxy variable for informal legal experience in order to account for those who had been involved in litigation or sought to file a claim in court but never reached a court hearing for two reasons. First, the choice to go to court does not always result in a suit being brought, and individuals might be impeded by procedural complications or discouraged for other reasons (as the villagers in Jicun were). Second, villagers in rural China have few opportunities to interact with court staff, so not only would such encounters be more likely if they had tried to go to court, but official encounters would be of some import and likely shape perceptions regarding the legal system overall. Meeting court personnel, given that courts are relatively rare in the rural areas and villagers are unlikely to meet court personnel under other circumstances, is therefore a useful proxy. For the trust variables—trust in local officials, central officials, petition officials and neighbors—respondents were asked to indicate their level of trust in the people identified, and responses were coded as follows: 1 = trust very much; 2 = trust somewhat; 3 = do not trust; and 4 = do not trust at all. These responses were then converted into dichotomous values, where 1 = trust, and 0 = do not trust. Trust in the center, local officials, and petition officials measure political and institutional trust. "Trusts neighbors" measures particularized trust. The variable "attends politically sanctioned meetings" was measured by asking respondents whether they attended village meetings convened by the

village committees; attendance indicates political engagement in a sanctioned forum, and is thus an efficacy indicator. For "personally has right to critique government action," respondents were asked to indicate their agreement or disagreement to the statement, "People like me have no right to critique government action," which was coded as follows: 1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree. The values were then reversed and the measure is used here as a second gauge of efficacy. The last dependent variable, "anticipated extra-institutional participation" is based on asking respondents whether they anticipated participating in sit-ins, protests, or demonstrations, words which in Chinese are clearly understood as extra-institutional activities and are not politically sanctioned. There is no way to know if expressing the willingness to take such actions in the future accurately predicts engagement in protests at some later date. However, because such actions are among the most politically sensitive to which a Chinese citizen can admit, I conjecture that respondents are likely more willing to confirm a future action than to admit to a past or present one. Moreover, because this type of action is so politically sensitive, merely indicating one's willingness to consider it in the future signals relatively greater flexibility regarding political restrictions.

Table 5.2. Logit Regression Model of Determinants of Perceived Court Accessibility

Courts Perceived Accessible to Ordinary Citizens	
Experience with Legal Institutional Performance	
Formal or informal experience with the courts	**-1.042**** (0.543)
Trust in Local Government	
Trusts local officials	**1.222***** (0.398)
Political/Personal Efficacy and Particularized Trust	

Participates in politically sanctioned activities	0.139 (0.193)
Personally has right to critique the government	-0.337 (0.391)
Trust neighbors	0.393 (0.523)
Demographic Controls	Yes
Constant	1.419 (2.122)
Observations	332
Pseudo R^2	0.181

* p-value <0.1, ** p-value <0.05, *** p-value <0.01
Note: All models have county-level fixed effects. Sample is drawn from 27 counties.
Demographic controls are: sex, ethnic minority, CCP member, parent of a minor child, age, age^2, income, and education.

The logit model presented in Table 5.1 tests the effect of legal experience and trust in local officials on the dependent variable, the perceived accessibility of the courts; the two efficacy variables, personal and political, serve as controls, as does the particularized trust variable. The goal is to assess both how legal experience affects the view of the system, and also how local trust is associated with that view. I find that legal experience is significantly associated with negative perceptions of the legal system, which indicates that legal experience likely causes a more negative view. The model showed a very strong positive association between accessibility and trust in local officials. One possibility is that one's perception of local officials affects all local institutions more generally, and is particularly significant when a respondent has little personal knowledge of the institution. Alternatively, this association might be due to a

respondent's sense of personal status: better-connected individuals might have interests that align more closely with local officials' interests, and similarly have better access to the courts.

Table 5.3. Logit Regression Model of Determinants of Trust in Central Government

Trust in the Center	
Accessibility of Legal System	
Believes legal system accessible to ordinary citizens	**3.733*** (1.314)**
Trust in Local Government	
Trusts local officials	**5.859*** (1.438)**
Political/Personal Efficacy and Particularized Trust	
Participates in politically sanctioned activities	**2.647*** (1.011)**
Personally has right to critique the government	-0.473 (0.927)
Trust neighbors	1.250 (1.056)
Demographic Controls	Yes
Constant	-1.069 (5.093)
Observations	269
Pseudo R^2	0.612

* p-value <0.1, ** p-value <0.05, *** p-value <0.01
Note: All models have county-level fixed effects. Sample is drawn from 27 counties.
Demographic controls are: sex, ethnic minority, CCP member, parent of a minor child, age, age^2, income, and education.

The logit model shown in Table 5.2 tests the effect of perceptions of the legal system on trust in the central government. If being insulated from poor policy outcomes and local institutional performance contributes to the persistently high levels of trust in the center, then stronger associations between perceptions of local institutions and trust in the center might signal

the center is less insulated from a change in those perceptions. Consequently, poor institutional performance might affect trust in the center. Ideally, one could look at changes in trust in the central government over time and compare it to the change over time in perceptual variables. Nonetheless, as legal experience negatively influences perceptions of the legal system, if the center is strongly identified with the legal system, then it is possible that those negative perceptions would also lead to less trust in the center. We observe this in the petitioning system, and the same could occur with the legal system. This pattern is worth exploring more fully; qualitative data seem to show the CCP has forged a connection with law through an extensive propaganda strategy, but where law is the tool of corrupt local officials, this is a hazardous link and could damage central trust.

Table 5.4. Logit Regression Model of Determinants for Anticipated Extra-Institutional Participation

Anticipated Extra-Institutional Participation			
	Model 1	Model 2	Model 3
Trust in the Center			
Trusts central officials	1.641 (1.120)		**7.666**** (3.377)
Trust in Local Government/Institutions			
Believes legal system accessible to ordinary citizens		**-3.639***** (1.358)	**-5.845***** (2.094)
Trusts petition officials		1.674 (1.401)	3.095 (2.297)
Trusts local officials		-2.147 (1.469)	**-4.357*** (2.292)
Political/Personal Efficacy and Particularized Trust			
Participates in politically sanctioned activities	0.286 (0.258)	**0.869*** (0.464)	**1.074*** (0.647)
Personally has right to critique the government	0.541 (0.657)	**3.883**** (1.597)	2.614 (1.651)
Trusts neighbors	**2.579**** (1.087)	**7.645***** (2.485)	**10.511***** (3.634)
Demographic Controls	Yes	Yes	Yes
Constant	-1.358 (3.161)	**10.201*** (5.307)	2.493 (6.599)
Observations	225	148	141
Pseudo R^2	0.286	0.566	0.616

* p-value <0.1, ** p-value <0.05, *** p-value <0.01
Note: All models have county-level fixed effects. Sample is drawn from 27 counties.
Demographic controls are: sex, ethnic minority, CCP member, parent of a minor child, age, age^2, income, and education.

Table 5.3 shows results of three models estimating the effects of trust and efficacy on potential political destabilization. Stability is the overriding priority of the CCP leadership. Many of the tensions among economic development, environmental damage, institutionalized public participation, and the balance of political discretionary powers fundamentally come down to the maintenance of party supremacy and social stability. As described previously, law and the

petition system serve this priority by providing information to the state about sources of popular discontent and by acting as pressure valves, as controllable channels through which that discontent can be expressed without giving rise to the more risky protests. That is only the case, however, if citizens utilize those institutions, which requires that they can use them, and then that the outcomes are sufficiently satisfactory to incentivize citizens to use them again.

Table 5.3 compares three distinct models. Model 1 focuses on the effect of trust in the center on extra-institutional action, while controlling for efficacy. Results indicate that trust in the center is not associated with anticipated extra-institutional action in isolation. In Model 2, I examine the effect of perceptions about local institutions on extra-institutional action. Results show significant association between the local institutions and the dependent variable, which supports the hypothesis that extra-institutional action may be selected as the alternative channel when other channels are perceived negatively. There is some question about the petition official variable in that regard, however: if individuals have positive perceptions about petition officials, why would they be more likely to engage in extra-institutional action? One possible explanation for this dynamic is a variable specification problem: the respondents were asked how much they trusted petition officials generally, and not how they felt about local petition officials in contrast to central petition officials. Among villager survey respondents, only 43 had petition experience, so when asked their level of trust in petition officials, those without experience might be describing their level of trust in central petition officials. Model 3 includes both local institutional variables and central trust. Results differ from those in Model, showing a significant association between central trust and extra-institutional action, in addition to the continued significance of local institutions. In other words, trust in the center is either irrelevant to the

expressed intention to take extra-institutional action in the future, or trust in the center may actually encourage such action. This pattern is consistent with the "rightful resistance" pattern identified and elaborated by O'Brien and Li (Kevin O'Brien, 1996; Kevin O'Brien et al., 2006), who find that protesters will justify extra-institutional action through the rhetoric and apparent political priorities of the central leadership. Such grievance framing could be savvy marketing or a real belief that the center sincerely wants to help the people, and therefore any method to send a message is justified; certainly the villagers of Jicun seemed to truly trust the beneficence of the central leaders. The political structures that seem to shield the center from liability for poor institutional performance, and the absence of systematic legal institutionalization may increase the probability of destabilizing extra-institutional action. In order to be heard by the more trustworthy central government, villagers may avoid the legal system and other local remedies associated with the local state, and choose to protest instead, thus contributing to social instability. Overall, these models show evidence that trust in the center has no significant association with the intent to engage in extra-institutional action without local institutional factors, that such factors, including institutional performance and trust in local government, are all significantly associated with the intent to act extra-institutionally, and that trust in the center is positively associated with the intent to act extra-institutionally in combination with local institutional factors.

V. Conclusion

What is the value of political trust, and how much is it worth? The CCP's absolute priority is political stability—policies, actions, and rhetoric make clear that the leadership is committed to responding to popular discontent to serve that priority. The tensions emerge when the state seeks to balance multiple elements that each contribute to stability but come into conflict with each other. This dynamic is evident between economic development and environmental governance, and it is evident in the contradictory associations among hierarchical political trust, institutional performance and effectiveness, and political discretion. Continued promotion of institutions as a channel for seeking remedy without a commitment to improving institutional function may damage trust in the center. The legal system then becomes a heavy liability, rather than a source of information and a forum for remedying grievances.

In this chapter, I present data that suggest the division between trust in local government and trust in the center may actually contribute to destabilization. This contrasts with the received wisdom that by helping to maintain state legitimacy, high levels of trust in the center diminish the likelihood of instability. Trust in the center does not decrease the likelihood that villagers will protest; instead, it either has no effect or makes them more likely to protest, particularly when they distrust local institutions. When local institutional channels fail the villagers or cause them further damage, like the petitioning system abuses, the political risks of extra-institutional action may seem less dire. If public participation does not lead to institutional engagement, institutional performance is likely to worsen, and any area of governance contingent on that institution will be affected. As argued in Chapters 2 and 3, improving environmental policies will depend on China's adoption of the transparent and consistent regulatory measures that generally are part of

an institutionalized legal system; the central government's slow progress toward such measures raise questions about its capacity for pollution remediation and prevention.

Choices made by villagers facing severe environmental pollution, this project's focus, shape and are shaped by the seemingly far removed strategies of the central state. Here, that interaction emerges through the risks and rewards posed by different channels through which citizens communicate grievances and seek remedy. On the surface, institutional and extra-institutional channels seem clearly distinct. Making a claim in court or petitioning the state should seem significantly less risky under coercive political conditions than protesting or demonstrating. But despite the transformation of the legal system in China, which is extraordinary by any standards, it remains a broad and shallow system, vulnerable to the political winds of the CCP's discretionary manipulation. As such, it lacks features and functions integral to many environmental policies, despite the leadership's repeated statements about its strong commitment to meaningful environmental policies. If these are deliberate trade-offs for a leadership intent upon maintaining political stability, the data presented here suggest they may not be justified.

The interactions between trust, institutional performance, and public participation are highly complex, particularly when applied to China. Additional research should build upon the findings described in this chapter, determine other dynamics that could contribute to destabilization, and perhaps identify an alternative indicator that could be used to estimate potential political instability.

6 CONCLUSION

There was a large persimmon tree behind the Wang family's house; the fruit is harvested to sell and to eat. The last time I went to visit, they loaded four bags full of persimmons, and insisted I take them home to my children. I carried the bags to my friend's tiny van, and then from the van to the bus stop. During the thirty minute ride, I held the plastic white handles. I trudged up five flights of stairs to our apartment, and brought the bags in and sat down looking at them. They were bright orange, and looked delicious, tempting. The Wang family had wanted me to give them to my children. So I got up, picked up the bags with their white plastic handles, and tossed all four bags into the trash. Because every time I had gone to visit, I would watch Mr. Wang spray the persimmon tree and soak its roots with water from a poisoned lake. And I had a choice whether to feed my family with such fruit or choose something else. Mr. and Mrs. Wang did not.

China's environmental crisis affects 1.36 billion people. Air in the cities is filled particulates that burrow into lung tissue. Soil is impregnated with heavy metals that leach into the groundwater. Toxic chemicals and organic waste drain into the rivers and lakes used to irrigate crops, and sometimes persimmon trees. The costs are increasingly felt by all. The middle and upper socio-economic classes, until this point largely centered in urban areas, are not only recognizing the long-term costs of living in cities like Beijing, Shanghai, and Guangdong, but they are also taking steps to protect themselves and their children. Urban populations are increasingly vocal about pollution; in an environmental documentary, Under the Dome, a former state media journalist presents the overwhelming data showing the dangers and costs of air

pollution in urban areas, and the documentary proved so popular when released that it was banned by the state (Chai, 2015). Some of these choices entail participating in civil action or speaking up with economic power, but often the choices are quieter. Recently, there has been a small migration of young families away from the cities to villages and towns where "the skies are sometimes blue, and the water is clean" (E. Wong, 2013). Although absolute numbers are unknown, this environmental refugee-ism has been identified in Yunnan, Anhui and Tibet—the town of Dali in Yunnan is a very popular destination (E. Wong, 2013). Ironically, as this project shows, even the greenest regions in China have been threatened or consumed by pollution; even Dali is unlikely to remain clean for long.

As is usually the case, however, those utterly without economic or political power pay a disproportionate cost. The villagers cannot relocate in search of clear skies and clean water. They cannot bring financial pressure to bear on companies that pollute or foster dangerous labor conditions. The rising pollution is immediate, severe and inescapable. So they are left with few choices, all with risks that must be balanced with what they know about their changing environment, their sense of their own abilities, and what they believe to be possible within China's political structure. Though one choice of one villager on the shore of Qilu Lake seems insignificant and irrelevant to the authority of the CCP leadership in far distant Beijing, the choices of the 600 million people that live in rural communities all across the country are not. These individual choices writ on the grand, national scale can determine China's course. Protests and collective action can destabilize the state, and the leadership is aware of this threatening possibility. Accordingly, the state has promoted pressure valves—the institutional channels, such as the petition system and the courts—to diffuse the threat and evaluate popular moods. As I

explore in the second chapter, however, China's pollution problem is much bigger than the possibility of political destabilization. This is an environment in crisis. The villagers forced to bear witness to environmental deterioration could be utilized as a policy resource to shift course, and enact effective environmental policies. The reluctance to foster systematic legal institutionalization while still seeking to employ law as a tool of environmental governance has costs to both law and the environment, as explored in the third chapter, to law's meaning and how much individuals trust the institutional channels promoted by the state. When calculating the various costs and benefits of acting, even of vocally acknowledging pollution, these costs feature prominently, and can make individuals less likely to choose to act in politically allegiant ways, as I theorize in Chapter 4. Then in the fifth chapter, I posit that these pressures, combined with the differentiated levels of political trust, can eventually contribute to politically alienated perspectives and actions. The political engagement choices of citizens and the state in the environmental crisis do not bode well for the future.

This dissertation focuses on the tensions and interactions of politics and actors that affect the crisis from within China. But pollution is a global problem, and even when specific environmental impacts may be felt solely within political boundaries, they are rarely without far more broadly reaching ecological and political effects. Climate change continues to be driven by OECD countries happily on the other side of industrialization periods that produced high levels of pollution. Wealthy countries, particularly the United States consume energy at absurdly high rates, and drive the CO_2 emission levels globally. CO_2 is a greenhouse gas, one of the gases present in the Earth's atmosphere that helps to increase temperatures on the surface. The rapid rise in CO_2 caused by human activity—both through CO_2 production and the loss of carbon

sinks, such as trees that can absorb the gas—is one of the main sources of rapid global warming. Though China is the top producer of CO_2 (24.7% of global anthropogenic CO_2), the United States (16.2%) and the European Union (11%) produce the second and third highest amounts, respectively. And when compared on a per capita basis, China only produces 6.2 tons per capita, while the United States produces 17.6 tons, and the European Union, 7.4 tons.[74]

The technology hardware market shows how so many individual choices far from China's borders have measurably worsened China's pollution problems. Rare earths are the elemental metals necessary for the production of a wide range of modern technological components, including fiber optics, lasers and smart phones.[75] The explosion of demand for these components is driven by the growing dependence on usable technologies, therefore creating huge demand for rare earths. Mining rare earths is labor intensive, and very costly to the surrounding environment--soil permanently polluted with heavy metals, that then contaminate ground water, and thorium emissions that poison the air (Guardian, 2012). But because China can control labor prices and has not restricted the environmental consequences, production levels currently supply 97% of the rare earths' market.

China's environmental and political future are significant for the world: simply as a matter of scale, the state's ability to control, halt or reduce pollution will affect climate change, air quality, and ecological balance in the Pacific and South China Sea. Therefore, understanding the motivations, policies and functional effectiveness of those efforts must be better understood.

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[74] Data on global emissions available through World Development Indicators, World Bank, at http://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&hl=en&dl=en

[75] Rare earth are 17 elements found in the Earth's crust. Although they are broadly and plentifully distributed throughout the crust level, they are never found in high concentrations, and therefore can be costly to extract.

This project seeks to make contributions to our knowledge of these dynamics. First, this project demonstrates the need to look more closely at the role of individual decision-making and its impact on politics and governance present even in the authoritarian context. Second, it raises questions about the relationship between the expansion and reform of regulatory institutions, specifically the legal system, and the impact those changes can have on politically and economically vulnerable groups. Third, it highlights how environmental policy theory can be informed by the failures and successes of environmental governance in China.

The uncertainties of environmental policy are extensive as a result of unknown dynamics within and among whole ecosystems. Then there are the structural uncertainties intrinsic to both the complexity of the science-policy theory hybridization, and to coordinating among institutions and actors involved in implementing even the most effectively designed policy. The risk of failure is high, and risk from failure and success is unpredictable. Nevertheless, the state of the environment globally, and within China is bad and growing worse. These chapters explore the political and environmental dimensions of public participation through the perspective of villagers, the role of legal institutions in supporting and shaping environmental governance, and implications of political trust and institutional confidence for environmental policy efficacy.

On the whole, China's environment is in dire straits. It is not clear if it is irrecoverable, but at this time, there exist no magic pills, no advanced technological fixes that can pull the environment back from the brink. In theory, preventing further pollution might allow the ecological systems to recover themselves, but not enough is understood about environmental science, even among the experts, to determine this probability. In the meantime, China continues to pollute, even as the government pours billions of dollars into remedies.

As examined here, China's environmental challenges are largely a story of politics, but also one of environmental policy and the role of legal development as an institutional tool. As such, the questions posed require an interdisciplinary analysis and the contributions are similarly interdisciplinary. The human and institutional behaviors we study as political scientists are not governed by the limits we place on academic disciplines; this project is therefore designed as an argument for greater flexibility across disciplines so as better to tell the stories meant to contribute to knowledge.

APPENDIX A. RESEARCH METHODS

with Kerry Ratigan

I. INTRODUCTION

This project is based upon original quantitative and qualitative research I conducted during 15 months of fieldwork in China, specifically a quantitative survey of 1,091 villagers and village leaders across three provinces, Hubei, Jiangsu, and Yunnan, (see Figure A.1); and 203 limited interviews and 19 serial qualitative, semi-structured interviews conducted through repeated site visits among villagers in 103 villages located on the shores of five polluted freshwater lakes in Yunnan Province (see Figure A.2). The Health, Environmental Protection, & Society Survey (HEPS) was designed and implemented jointly with Kerry Ratigan (currently Assistant Professor of Political Science, Amherst College). The semi-structured interviews were designed and implemented independently (with the support of a field assistant). Both portions of fieldwork and the subsequent analysis were informed and supported by archival data, government-issued statistical yearbooks and previous research by scholars of Chinese politics, environmental policy, and legal reform, among others. I started with archival research to design and plan my fieldwork, and then went into the field to establish the best access points for in-person interviews and the survey. I used these preliminary data to inform the next round of fieldwork, observing questions' relative sensitivity in the restrictive political environment, response rates and how respondents understood and identified environmental problems they faced. The multi-stage, multi-method plan most effectively navigated both the political limits set by fieldwork in an authoritarian country and the sensitive and interdisciplinary complications of

environmental issues in China overall. This allowed me to triangulate the resulting data to develop hypotheses about the factors that lead poor villagers to act (and not to act) in response to pollution.

Figure A.1. Map of HEPS Provinces

Figure A.2. Map of Yunnan's Plateau Lakes and Interview Sites

I conducted my fieldwork with financial support from the National Science Foundation, the Department of Political Science, University of Wisconsin–Madison, and two Vilas Research Travel Grants from the Graduate School at the University of Wisconsin–Madison. The semi-structured interviews in Yunnan were supported by a fellowship from NSF, administered through the Southwest China-IGERT program at the University of Wisconsin–Madison, an additional

grant awarded by the Southwest China IGERT program, and one Vilas Grant. The survey was funded by the National Science Foundation's Doctoral Dissertation Research Improvement Grant (awarded to Kerry Ratigan) and by the Linkage Grant (specifically awarded for collaborative projects), also through the Southwest China IGERT program (awarded to the author), as well as additional support from the Summer Initiative Fund of the University of Wisconsin–Madison's Department of Political Science and another Vilas Grant.

The goal of this section is not only to explicate the precise methods used in gathering archival and fieldwork data for this dissertation, but also to highlight how integrating a multi-stage, multi-method, and collaborative fieldwork plan had a significantly positive impact on the resulting data quality. Conducting research in China, particularly environmental policy-related research, can be challenging for a variety of reasons. Culture, asymmetrical information,[76] and politics all present obstacles to effective fieldwork and had a recognizable and immediate effect. For example, on more than one occasion, I asked a villager if a body of water was polluted, he or she would respond, "No." However, if I asked the same villager if the water was bad to drink, he or she might answer, "Yes, because local factories poison the water," or something similar. Alternatively, asking if the government was responsible for some of the problems could sometimes cause a reluctance to speak further, while asking if there were specific local officials who had failed to fix the problem often produced extensive stories about local problems and

[76] Asymmetric information in environmental studies means that different players—in this case, villagers, village leaders, local politicians and business—have different access to and understanding of the implications of any given type of pollution, such as whether dumping chemicals into a lake will cause temporary or permanent environmental or health problems for the local communities (Lora‐Wainwright, 2009). Asymmetric information creates problems for effectively addressing pollution everywhere, but it is particularly daunting in developing or authoritarian countries where access to outside informational resources is limited by socio-economic conditions or government control. China's rural villages are limited in both dimensions, making asking the right questions about how they might choose to act even more pivotal for identifying the roots of pollution protests.

local officials. These particular examples highlight how political sensitivities, linguistic impediments, and asymmetric information can impact research. But these are only a small proportion of questions that would prove to need adjustment and adaptation in order to really get at many of the environmental and political issues villagers faced.

HEPS was specifically designed and implemented collaboratively with these concerns in mind. Kerry and I were not only able to pool our knowledge based on our respective independent research, but we were also collaborating with five Chinese academics and 62 enumerators. These team efforts proved an extraordinary opportunity both to contextualize data gathered during the semi-structured interview portion and to generate generalizable data about larger patterns of environmental actions in rural China. This opportunity would not have been possible without collaboration: financial issues alone could have proved insurmountable, but the methodology and the resulting data would certainly have been more flawed. In short, our dissertations both would have been the poorer for not pursuing a more ambitious methodological scope. Moreover, as I show in this appendix, the contributions and support of our Chinese colleagues and enumerators would also prove to be invaluable. Overall, fieldwork collaboration was fundamental to the success of this project.

This appendix is organized as follows. I first lay out the framework of archival and pre-fieldwork data that supports the dissertation's fieldwork design and I present the independent portion of my research: semi-structured interviews conducted among villagers living on five Plateau Lakes in rural Yunnan. I then discuss the transition from an independent fieldwork to designing a collaborative survey. Third, I describe the HEPS survey, designed and implemented in collaboration with Kerry Ratigan. I discuss the sampling for localities and individuals, the

process of drafting the survey instrument, and the survey implementation. As I show below, the HEPS survey design and implementation were the consequence of deliberate and reflective decisions at every point regarding design and implementation in order to address the challenges of the authoritarian, developing country context, and to ensure the highest quality of collected data; in pursuing that goal, we often deviated from several more routine survey design features. I also lay out how the HEPS data not only contributed substantially to my dissertation, and complemented the independent portion of fieldwork. I then conclude.

II. Semi-Structured Interviews in Rural Yunnan

This project started with an inquiry: would the expanded use of the legal system and other institutional pathways for seeking remedy reduce the likelihood that villagers facing severe pollution would turn to protest instead? My dependent variables are forms of action or inaction in the presence of immediate, localized and observable pollution (my primary control variable). Water pollution, specifically in non-traveling bodies of water (lakes rather than streams or rivers), met all the criteria for the independent variable. In order to develop a working theory on the causal mechanisms that shape action or inaction, I identified independent variables that would likely be significant: point-source vs. non-point-source pollution, varied options for seeking remedy, some openness by government or government officials to addressing environmental problems, and variation in local power balance among relevant players and competing interests (economic, political and village groups). I then sought to control for other variables. For example, as a consequence of China's uneven decentralization policies, provincial governments sometimes have a great deal of leeway in determining precisely how environmental

policy ranks and ought to be carried out. Therefore, I decided to focus on several villages within a province, controlling for the provincial political climate and enabling me to focus on the power dynamics between villagers and local officials.

I selected Yunnan Province as the primary region for gathering qualitative data because it presents a crucial case (Gerring 2007): if institutional pathways constructed to reroute villagers from protest to acceptable remedy-seeking channels failed in Yunnan, prospects for other regions are not good. Yunnan is an ideal environment for a variety of reasons in which to study remedy-seeking dynamics. Of all of China's provinces, Yunnan has the greatest level of natural biodiversity and greater than 50% of the province has been declared an international biodiversity hotspot. The wealth of the environment has attracted the attention of both the central government and international NGOs, which have pushed hard for protective regulations and managed eco-tourism. Consequently, there is a concentration of nationally protected areas, environmental regulations, and greater oversight within the bounds of the province. In addition, a strong presence of international NGOs with varied goals, such as protecting the habitat of the Yunnan golden monkey (The Nature Conservancy) or working with local communities to incentivize conservation efforts (Conservation International), has brought in financial and informational resources that contribute to a more environmentally-friendly perspective.

Yunnan is also the third poorest province in China, suggesting weaker economic actors who might otherwise oppose environmental policy. Instead, the province is highly agrarian, and thus lacks many of the more high-profile industries that have made the news as sources of the air pollution choking Beijing and Shanghai. That is not to say, however, that Yunnan lacks any polluting industries, just that they are more limited and tend to be either agricultural, or and

exploit readily-available raw materials: Yunnan produces the largest proportion of fruits and vegetables for China at large, the flower industry has expanded rapidly because of favorable growing conditions, aquaculture thrives in the Plateau Lakes and there are extensive mining facilities. As discussed in previous chapters, short-term economic interests can shift priorities of local officials and even the villagers themselves: if, as was the case in three villages that I visited, a factory is not only located next door but is the sole source of income for villagers and local officials, few will challenge that factory's right to dispose of waste in the cheapest and, thus, most polluting fashion. While I encountered these dynamics in Yunnan, the reduced presence of heavy industry means there are fewer of these relationships.

Yunnan also has a large population of ethnic minorities, which has political and economic implications for the study of local environmental politics because ethnic minorities in southwestern China not only vary greatly in their approach to environmental protection but some also receive special dispensation to manage certain areas with relative autonomy. The Mosuo (摩梭) in Deqen Autonomous Tibetan Prefecture in northern Yunnan, for example, manage the region around Lugu Lake, one of the cleanest and clearest lakes in China and the maintenance of the lake as a source for traditional fishing practices is a central feature of the Mosuo culture. The Mosuo have thus far kept out environmentally-disruptive industries. While few minorities in Yunnan maintain such cohesive and complete control over regional lakes, the differing cultural values regarding the role of the environment in this case demonstrate the variation of approaches among the smaller ethnic minority communities and the Han government at large.

Yunnan also has a high level of environmental policy innovation, including the establishment of environmental courts, which is a new phenomenon in China. Of the newly

established eleven environmental courts in China, eight are located in Yunnan. These new courts suggest the provincial government is committed to greater openness to individuals pursing claims for environmental harm.[77] In other words, while Yunnan is not ideal for generalizability to other provinces, it is ideal for improving environmental prospects, and potentially the friendliest province to those who would speak out in whatever forum they pursue. Moreover, since the headwaters of three major Asian river systems either start in Yunnan or flow from Tibet through Yunnan, water pollution has serious implications not only for China but for all of East and Southeast Asia. Consequently, the issue of water pollution in Yunnan has local, regional, and international ramifications. The central government and the provincial government have therefore kept relatively good records on water quality in the region, which I utilized to identify sites of interest and develop my field plan.[78]

I determined that semi-structured interviews with villagers would be the best opportunity to examine their perspectives, and I selected five lakes in Yunnan whose pollution levels were identified by the Ministry of Environmental Protection and the provincial environmental office as containing high enough levels of pollution for at least part of the year that such pollution would be both observable and have an impact on the villagers living on their shores: Cheng Lake (程海), Qilu Lake (杞麓湖), Yilong Lake (异龙湖), Yangzong Lake (阳宗海), and Xingyun Lake (星云湖) (See Figure 4). One of the challenges of evaluating environmental politics with

[77] The establishment of these courts should not be taken as a de facto indicator that the province is truly committed to environmental protection, only that the government is committed to at least appearing so, which is more than other provinces have committed to.

[78] I have used statistical yearbooks generated by the provincial and national Offices of Statistics as a way to identify environmental trends, but conflicting and imprecise information reinforce the need to be skeptical about the data they contain. There may be intriguing political issues that would explain sharp divergence between data reported by the national-level offices and the provincial offices; however, that is outside the scope of this dissertation.

water is the up/downriver phenomenon: population centers where the pollution occurs rarely suffer the consequences of such pollution, and instead the pollution is passed downriver so that those suffering the effects have very little control over remedy or resolution, thereby creating a moral hazard and a political quagmire. While this is a significant focus for environmental policy makers, my purpose here was to explain variation in how local pollution by local players inspired action by local villagers. The water pollution and the source of the pollution had to be immediate and identifiable to local residents. The five lakes range in size from 30-70 km^2 surface area; at each point around the lakes you can clearly see the other side, but the lakes are sufficiently large that there is rarely communication or travel across them. Because they are mostly closed freshwater systems and have relatively similar volume, pollution can affect the whole lake. In some cases, there were both point and non-point sources of pollution, and one village might be sensitive to the different sources, while another village on the same lake would only know of one or zero sources.[79]

The semi-structured interviews for this portion of research were conducted through site-intensive methods (Read 2010). I was in the field for approximately 15 months, from October 2010 through February 2012 and I visited every village (103 villages in total) around the five lakes. In these villages, I spoke with 3-5 individuals (sometimes in groups) for initial interviews. I then returned 2-4 times to 4-5 villages per lake and spoke with some of the same individuals I had identified on the preliminary round. As a result, I gathered data from 103 villages through

[79] Point source pollution and non-point source pollution simply mean that there is a discrete and identifiable point from which pollution is occurring or it is seeping in in a more generalized fashion. For example, a factory dumping waste into a lake is point source pollution and agricultural run-off is an example of non-point source pollution.

preliminary interviews with approximately 200 villagers, and conducted serial interviews with 19 villagers from the five lakes.

These villagers invited me into their homes and shared some extraordinary stories about their lives and their communities (not all of which can be included here both in the interests of relevance and protecting my respondents). In one village, a respondent was convinced that the nearby factory was capable of controlling the weather and the lack of rain could be traced back to the factory de-seeding the clouds, rather than the better-known technology of cloud seeding to cause rain. In another village, the couple with whom I spoke swore they would never use the legal system for any reason, including seeking remedy for environmental problems, because they had been fighting a custody case on behalf of their son and his child for three years. While neither of these stories specifically identified under what circumstances and how these respondents might be driven to seek remedy, they still demonstrated important factors in the decision-making process: in the first, whether the respondent actually believed in de-seeding, he certainly believed that there was someone to blame for the drought; and in the second, the respondent's disenchantment with the legal system made it a much less palatable system of resolution if it ever came to seeking remedy for pollution.

The site-intensive approach presented certain advantages. First, it built trust. In one village, I found it very difficult to find anyone to speak with me; villagers were not entirely convinced I did not work for the government or was somehow spying for the local aquaculture factory. When I came back the second time, nothing had happened between visits and I came asking the same questions, they were much more forthcoming. Second, return visits allowed me to maintain better methodological accuracy. After some conversations, I found I had notes that

were not entirely clear, or there were some answers that necessitated follow-up questions. Returning to the same village to speak with the same villager allowed me to clarify certain points. I also found that sometimes stories changed, whether because there were different perspectives that they considered once they recounted their experiences or respondents changed their minds about sharing their stories, and that also provided new information of a different sort or clarified inconsistencies. Third, returning to sites allowed me to get different perspectives from the same communities. If my original contact was unavailable, or he or she was part of a larger group when I arrived, I was often able to record greater variation in responses to local environmental problems while still achieving saturation on some issues.[80] In some cases, this might mean that villagers would be more forthcoming, encouraged by the anger of their community. In other cases, villagers might grow more silent if they felt that they might be censured for speaking out by their communities. For example, on my second visit to a village at Xingyun Lake, my previous respondent asked me to join a group of older men who discussed the environmental problems they faced. As some of these men got angrier about the state of affairs, others seemed uncomfortable and eventually moved away from the group.

The site visits were conducted over a period of 14 months, from November 2010 – February 2012. I had one of two field assistants help me with translation challenges between local dialects and Mandarin, and often a local driver or contact who was sufficiently familiar with the lake area to allow us to circle each lake and visit every village. With the permission of the villagers, I was also able to document failed environmental policy measures, such as the

[80] The variation helped to confirm the individuality of responses, even in a group setting, while the saturation (similar accounts from various interviewees to the extent that the researcher is confident that these accounts represent a common or typical experience for many people) helped to identify emerging patterns of decision-making behavior.

water filtration system that had been built too far from the shore of the lake to function, and clear violations by villagers of local environmental protection policies, such as crops planted right next to the shoreline rather than set back the requisite 25 meters. Despite concerns that the villagers would be unable or unwilling to speak with me, as indicated by my interviews with local NGO professionals and scholars, site visits were often simply a matter of showing up, asking villagers to share some of the challenges they faced from the changing environment, and writing notes as quickly as possible.[81]

These direct and semi-structured interviews also yielded surprises: other questions that seemed straightforward would fail to elicit informationally substantive responses. As mentioned earlier in this chapter, asking if the water was polluted rarely produced substantive responses, but asking if the water was dirty or dirtier than it used to be, almost always yielded further information. In those cases, I had to look at why these questions had failed, and experiment with different ways to phrase or approach these conversations. Repeated site visits and the flexibility of the semi-structured interview allowed this flexibility and adaptability. The site visits also allowed me to ascertain what rules applied in each village: who was comfortable speaking with me, what the major issues were, when communication might become challenging, and, most importantly, what were the local issues that would affect responses and how to adapt my interviews to those issues without biasing my data. Responses to environmental questions are highly dependent on perceptions, asymmetric information, and economic ties. In one village, asking about local environmental challenges would produce voluble complaints about a local

[81] In preliminary interviews, scholars and even NGO professionals suggested that there would be a high rate of non-response because villagers would (1) feel the topic was politically sensitive, and (2) be so poorly educated that they would lack the intellectual capacity to understand the questions and perhaps even what pollution was.

factory because few to no villagers depended on the factory for jobs, while in the village on the other side of the factory, where villagers were employed by the factory, there were neither complaints nor even acknowledgement that a water pollution problem existed, despite dead fish and algae blooms floating on the edge of the shore. There was also an issue of trust. In some villages, villagers spoke easily and at length, and encouraged me to tour the broken water-filtering facilities or take photos of deformed lake fish. In others, only on the second or third visit would specific challenges or struggles concerning the changing environment emerge.

The issue of protecting informants, respondents, and field assistants is of utmost importance for a social scientist. And being identified as foreign researcher can matter in the perceived risk calculation, as well as have additional bias effects, which will be discussed in the following section on the HEPS survey. To protect those who participated in my research, I did not record our conversations. I did find some advantages: there was one village where only one family was willing to speak with me, and only after I had shown my passport and my university identification card. It took a second visit for them to invite me into their home, and I have wondered if they were reassured that between my first and second visits, there were no visits from unhappy officials or factory representatives. In this case, the factory produced spirulina, and they had managed to manipulate local regulations such that villagers in the surrounding area were not allowed to fish using certain methods that would disturb the spirulina production.[82] I was convincingly not a threat as a foreign researcher, but it also served to remind me of the importance of protecting data and the respondents. Despite the relatively open interviews I had in

[82] I was able to confirm the interdiction with other interviews but not find any evidence of actual regulations favoring the factory in question. See Chapter 3 for a more in-depth discussion regarding legal co-optation and this case.

many villages, the threat of coercion and consequences in rural China are very real, and do not disappear for respondents even after I leave.

After I had completed about a third of my site visits, some patterns emerged that raised questions about the broader context of these villagers' stories. It also seemed that each village differed in part because of local ties among village leaders and economic players in the region, constituting an integral component in the relationship between villagers' perceptions, actions, and institutional change. However, I was concerned that approaching the village leaders after having laid the groundwork with my original respondents would either introduce bias or mistrust, thereby compromising further follow-up interviews with the original respondents (and compromising their identities if, as was the case with the spirulina factory, such interviews would lead to trouble for the villagers), or the village leaders might be unwilling to speak with me.

After consultation with Kerry, also conducting her own qualitative research in China, we decided to conduct a survey. This second component would be not only a substantive contribution to our understanding of social policy in China, but also an original methodological contribution to China studies and research in challenging environments; there are no surveys structured around both village leaders and the villagers themselves in the Chinese politics literature. Village leaders include village heads, village doctors, and other village officials who hold leadership positions in the village. Research in China does not typically survey village leaders, and those that do, do not also survey the villagers. (Carlson et al. 2010; Manion 2010) We viewed this lacuna as an opportunity to provide a new perspective on how local government agents perceive their positions and their relationship to the local community as well as an

invaluable compilation of village-level data on issues that are not compiled in statistical yearbooks as well as providing data that would extend our research contributions beyond their limits at the time.

III. The Survey: Design, Implementation, and Collaboration

The HEPS survey, which produced a substantial share of the data I used in this dissertation, was a fully collaborative endeavor with Kerry Ratigan, and an unusual one in our field. We are warned during the coursework and proposal development process that field conditions—a restrictive political environment, logistical challenges or perhaps new questions coming to light—almost always shape the final fieldwork design and results. In the end, however, the fieldwork tends to remain one doctoral student critically examining a question, designing a fieldwork plan and then going into the field to execute that plan, and even as that plan changes, it remains largely independent. This project departs from this model, and does so to the benefit of our two dissertations and our resulting data.

Kerry and I did not lightly decide to conduct a survey. A full survey added to one's fieldwork, after having already completed a significant portion of field research, is highly demanding and mandates having questions that only the survey method can answer. Strictly speaking, both of us would have produced enough data on our own to write dissertations, but those dissertations would not have made the contribution to knowledge that we hoped to make. Furthermore, surveys in China, given its size and relative political importance, remain scarce. And while surveys are increasing, so too are the limitations on foreign researchers (Carlson et al.

2010) While all scholars, Chinese and foreign, are limited in what is permissible research, foreign scholars are subject to greater suspicion and even more limits, both *de facto* and *de jure*. Between 1999 and 2004, the Measures for the Administration of Foreign-Affiliated Surveys (National Bureau of Statistics) generated increasingly restrictive requirements to meet to obtain survey permits. Moreover, there are specific regulations that prohibit non-Chinese scholars from certain types of independent research within China: survey research by foreign scholars without direct oversight by Chinese researchers is not officially authorized and may be considered "gathering sensitive information." Even in those cases where research proposals have earned proper clearance, the lack of strong legal institutions results in ad hoc decision-making by local officials who may err on the side of caution and, thus, prohibit research that could be considered sensitive.

The survey enabled us to test the generalizability of key hypotheses as well as create a relatively controlled environment where the same questions were asked of everyone. The item nonresponse rate was very low for most questions (often less than 10 percent, even among politically sensitive questions) and I was able to gather information about the link among perceptions of pollution, environmental policy implementation through village leaders, villagers' expectations, and perceptions of government on a scale that would not have been possible through interviews—I did not have the personnel. As the survey was conducted with the logistical support of local universities, and, in one case, a government-affiliated research institute, village leaders seemed consistently forthcoming with our enumerators. We also encouraged enumerators to provide as much supplementary, qualitative information as they could, including, for example, whether there were other individuals present (an issue that has

emerged as a source of reliability problems in politically restrictive environments). Therefore, we were able to gather a more complete picture of respondents' views and any extenuating circumstances that may have affected responses.

Political sensitivity, especially when a researcher must prioritize respondents' security over methodological rigor, is further complicated when one cannot explicitly determine what is truly off-limits. From the perspective of China's government, environmental issues I explored in this project are significant, and therefore, somewhat sensitive at all levels, though for different reasons. Consequently, the message about what is sensitive and what is permissible is inconsistent. These types of inconsistencies have a direct impact on fieldwork. Repetitive experimentation with interview format and survey design—visiting sites over and over again, integrating this information with the survey plan, pre-testing and re-testing beyond the current standards—are, in some cases, the only way to ascertain exactly what the limits of data gathering can be in rural China. It is not as simple as asking for (and abiding by) the input of local colleagues, despite their expertise in the field. Many Chinese scholars and government researchers err on the side of caution to protect themselves and their careers; they have to. But erring on the side of caution also means uncertainty about what, precisely, is actually off-limits. I found through my independent research that rather than being reluctant to answer certain questions for fear of government reprisal, most villagers were willing and even happy to share stories about the environmental challenges they faced. We just had to know the right questions. In this manner, the independent portion of my research and the collaborative survey were interdependent. Because both Kerry and I had experimented with interview format and structure as it related to politics and social policy, we were then able to use these experiments to shape

sections of the survey, such as the question format for the survey instrument and the ideal composition of enumerator teams.

Because of the challenges of conducting social science research in an authoritarian, developing country, social scientists must rely on multiple sources of information and aim to triangulate to generate a more accurate and complete picture of political dynamics (Carlson et al. 2010). Incorporating semi-structured interviews and survey data in addition to official statistics and media reports enabled me to put together a more complete and methodologically satisfying picture of the dynamics between political pressures for social stability and those pollution issues so grave that they would inspire a village to fight to be heard. In the following sections, I break down both the process and challenges of the conducting the HEPS survey.

A. Sample of Localities and Individuals

For the results of a sample survey to be generalizable to a broader population, the sample must be representative of the target population. In this project, I sought to understand the perceptions about pollution and the decision-making process by which individuals might choose to seek remedy. While limited resources precluded a nationally representative sample, we were able to sample villagers and village leaders from rural localities in three provinces that vary significantly across socio-economic conditions. Despite the authority of the central government, most environmental policy is designed and policed by the province and lower levels of government. As a result, local governments' success and commitment to managing and creating pathways to remedy for those facing harmful levels of pollution—particularly the rural poor, who lack any other political and economic methods for seeking recourse—depend on two

factors: how severe the pollution is (how directly and immediately it affects the population in question) and how likely control of the pollution is to affect short-term economic development.

We therefore chose these provinces for three primary reasons, with key independent variables in mind. First, these provinces represent some of the salient socio-economic, demographic, industrial and geographic diversity of the country. Yunnan is poor, and heavily agrarian. Hubei is a middle-income province with mixed industry and agriculture. Jiangsu is wealthy, highly developed, and heavily industrialized. Geographically, Jiangsu is located in the littoral region, while Hubei is in central China, and Yunnan is in southwestern China. The geographic variation allowed me to control for differing natural environments: looking at change over time of local geographic features—had pollution negatively impacted the soil or the drinking water in the specific localities--rather than some absolute environmental quality standard which is unattainable because the primary source for this information is the inconsistent and unspecific metrices of national and provincial statistical yearbooks. Jiangsu and Hubei do not have significant populations of ethnic minorities, whereas Yunnan has a large, but varied ethnic minority population. Having ethnic minorities often changes the dynamics of local politics in Chinese provinces; therefore, we sought to include Yunnan to examine the extent to which the politics of ethnic minorities might impact social policy and local state–society relations, although a nuanced analysis of the politics of ethnic minorities in China is beyond the scope of this dissertation. Second, the three provinces also vary in a stated and implicit commitment to controlling pollution. The Yunnan provincial government has sought to utilize eco-tourism as a much-needed source of income, while Hubei is indifferent to pollution issues, and the Jiangsu government is struggling to address problems experienced as a down-stream region that is very

much at the mercy of neighboring provinces; coordinated efforts to control cross-boundary pollution (in one case, dead pigs) have failed spectacularly. Third, our respective independent fieldwork projects[83] improved the quality of our collaboration and allowed us the opportunity to compare qualitative and quantitative data; once these two provinces were selected, we then chose Hubei to provide variation on the dimensions previously described. Fortunately, we were also able to secure local contacts in Hubei, and were able to use already established contacts in Jiangsu and Yunnan.

We then utilized a multi-stage, nested sampling design. Within each province, we chose three prefectures to represent the socio-economic diversity of the province. Each province has between 13 and 16 prefectures and prefecture-level municipalities. Qualitative and archival data demonstrated that socio-economic levels correlated with level of industrialization and the severity of certain immediate and evident types of pollution, such as air particulates, heavy metal soil contamination, and dead water. Therefore, ensuring socio-economic variation was crucial. We measured wealth by using the most recent statistics available for the municipality's gross regional product per capita; these are published by the provincial government in statistical yearbooks. Below the municipality, localities were chosen in a nested, randomized fashion. Specifically, three counties were selected randomly within each municipality, and then three townships and two back-up townships within each county were selected. Finally three villages and two back-up villages were also selected within each township. We instructed teams to visit three townships per county and two villages per township, where possible. Some teams were able

[83] Kerry Ratigan conducted semi-structured interviews with county-level officials, hospital personnel, and villagers in Jiangsu, Hunan, and Gansu, while I conducted site-specific research in Yunnan.

to visit additional villages and townships, which had been selected as back-up localities. We include data from those localities in the dataset since those villages were also selected according to the same nested, randomized sampling method.

Publicly available lists of counties and townships were reliable, but additional information that would have been required for a probability sample or for a stratified sample was not reliably and consistently available in all provinces. Therefore, we elected to select counties, townships, and villages within each municipality randomly. At the village level, sampling presented additional complications. Through publicly available sources, we were able to compile lists of village names within the townships selected and we then sought to identify and confirm village names and locations through satellite mapping. However, a fair amount of flux has occurred with village boundaries and villages may change names or be amalgamated when local authorities see fit. Therefore, occasionally, the names of villages in our sampling frame were inaccurate. Further information at the village level, even basic demographic information such as population, is not consistently publicly available without permission from local government (usually the township government). Obtaining this type of information from over 80 townships would not have been feasible given the resources available. Therefore, we selected villages randomly, rather than probabilistically. However, because lists of village names were not always updated and because some villages were so remote that they were inaccessible or dangerous to travel to, we sampled back-up villages. Teams of enumerators were instructed to attempt to visit the villages that were sampled first and then visit back-up villages in the event that sampled villages were not accessible or village officials refused to participate. In fact, no team encountered a village where all officials refused to participate nor did any officials express

concern about official permission, thus, the latter was not a problem, and no village was visited that was not selected among the pool sampled for each township.

We were not able to gain access to local registries of villages or households and, therefore, had to rely on limited, and sometimes outdated, public records to create the sampling frame of localities. For individual-level sampling, certain teams were designated as enumerators for officials and others were responsible for villagers. For officials, enumerator teams went to the village committee's office and spoke to at least one village leader. In most cases, enumerators were able to interview two or more village officials. In most villages, there are between 5 and 15 people on the village committee who are chosen through a combination of nomination and popular election by villagers. Previous research has examined the quality and consequences of village elections for local government accountability and democracy (e.g., Manion 2012; Luo et al. 2010). Enumerators were instructed to speak to whichever officials were available and could provide the basic village-level information that appears in the questionnaire. Thus, the sample of officials is not a probability sample. The other enumerator teams were instructed to find the main village intersection of roads and fan out in different directions, seeking willing respondents at every fifth door until they had completed two interviews each or time was up. Our goal was two interviews with officials and four interviews with villagers per village. Sometimes the enumerator teams were unable to meet this target because of access to willing respondents or time constraints, and sometimes they were able to exceed the target.

The final sample comprised three provinces, nine municipalities, 27 counties, 82 townships, 169 villages, 290 village leaders and 901 villagers.

B. Drafting the Survey Instrument

Drafting the questionnaire used in the HEPS survey required a number of iterations and was developed and revised over a period of approximately eight months, starting when we created the first draft, and not ending until two weeks following the third training. Because we wanted to ensure clear language that both enumerators and respondents would understand, despite differences in dialect and topical vocabulary across three very different provinces, we utilized knowledge gained from the semi-structured interviews from our independent research on environmental, political, and social dynamics, as well as feedback from American China scholars, our Chinese colleagues and partners, and the enumerators themselves during training. We also incorporated results from each of the three pre-tests we conducted.

The majority of questions in the instrument are closed-ended questions. However, the instrument does include some open-ended questions and we encouraged enumerators to provide supplemental information. Enumerators then had a full page to write additional notes and anecdotes that interviewees shared with them, as well as any concerns, such as interruptions by the interviewee's superior or other people who may have joined the interview or influenced the interviewee's responses.

The questionnaire is divided into eight sections: personal characteristics and demographic information; local environmental conditions; healthcare usage and perceptions; the legal system; trust and relationships with others; sources of news and information; attitudes about social issues and the government; salary, political participation, and other sensitive questions. We chose this order to ensure that the data of particular relevance to our two projects would be more likely to be completed along with demographic information, and also so that if the respondent's attitude

was affected by the more politically sensitive questions, such as queries about party membership and participation in group activities, any resulting discomfort would not increase item nonresponse on the other sections, or cause the respondent to end the interview prematurely.

A pre-test in each province, for a total of three pre-tests, also enabled us to adapt the survey instrument in both form and content. First, the questionnaire needed to be revised to reflect local conditions and to ensure that questions were worded as clearly as possible in plain language that villagers could readily understand. In addition to our own experiences conducting qualitative fieldwork, discussions with our local collaborators and local enumerators provided further perspectives regarding which questions might be considered politically sensitive by villagers and village leaders. Generally, we excluded questions that were deemed highly politically sensitive by our local collaborators. Moreover, multiple pre-tests allowed us to revise the questionnaire and reduce its length so that the average time for completion was under an hour. The questionnaire needed to be a reasonable length so that the time for participation would not be unduly onerous for villagers and officials; this improved the survey response rate and facilitated the work of the enumerators.

Most of the survey instrument was administered to both villagers and village officials. However, a few questions related to the village, such as village population, were asked only of village officials. Opinion questions related to perceptions of government and local leaders were modified to reflect the position of a villager or village leader. Thus, we have been able to conduct analysis related to the differences in perspectives between villagers and village officials. By conducting extensive training of enumerators, communicating with enumerators while they

administered the survey, and utilizing three pre-tests to revise the instrument, we sought to ensure that the data collected were as reliable as possible.

Some of the feedback we received from our enumerators focused on language and question structure—either because they did not believe the respondents would be able to answer the questions, or because they argued that the language did not sound "Chinese" enough. While we welcomed substantive feedback, it could be challenging to address non-specific critiques. We found that often the language of the questions was what it needed to be—and we were able to test them in the pre-tests—but that the concern over Chinese-ness originated more with our own foreignness. In other words, seeing and hearing us as non-Chinese read through the questionnaire created some cognitive dissonance that was only resolved when the enumerators then had the opportunity to actually talk to villagers in the pre-tests. If I had had to draft the questionnaire in isolation as a foreign Chinese speaker, I might have struggled with knowing whether the language issues did lie with my imperfect command of the local dialects.

The other challenge was ensuring internal validity: while we would need to vary the dialects somewhat, the questions had to remain the same. In one province, our government-affiliated academic partner requested changes be made to the survey instrument that would vary the questionnaire from the other two provinces. By strategizing together, we were able to determine how to respond to the request without sacrificing our ability to conduct the survey altogether and end up with a different questionnaire in the third province.

C. Training

We collaborated with local scholars at four universities and one government-affiliated academic institute in the three provinces to implement the survey. In each province, at least one local professor assisted us in recruiting appropriate students to apply to be enumerators. In Jiangsu, all students were graduate students and students from one university had previous experience conducting surveys in local hospitals for their program in health economics. In Hubei, students were advanced undergraduates from a variety of majors without previous survey experience. In Yunnan, students were a mix of advanced undergraduates and graduates and approximately one-third had experience conducting surveys on social policy in rural areas. The majority of students were from the provinces in which the survey was being conducted, and many students were local to the prefectures and counties that contained the target villages, which improved communication and comprehension in those villages where villagers only spoke a local dialect (although we also ensured that no enumerators were from villages selected for the survey, lest they have personal relationships with local villagers or village leaders).

In each province, we conducted a three-day training for enumerators, which included an exam to test students' knowledge and a pre-test in a local village. In addition, we reserved the right to dismiss students who did not meet our criteria. The three-day training included an introduction to survey methods, sensitivity training for conducting research in rural China, and practice administering the survey instrument to other trainees. The training culminated in a pre-test in a local village, which enabled us both to refine the survey instrument to local conditions and to evaluate the enumerators' performance. For students without previous experience conducting a survey, the pre-test was essential to dispel some of the trepidation that they felt in asking questions of strangers, and reassured many who were concerned about whether

respondents might perceive the questions as personally or politically sensitive. Moreover, we found that taking many of the enumerators out into the field gave them a sense of investment in the methodology of the survey: it became more clear to them how and why certain questions must be asked in the language used in the questionnaire and, by comparing results with their peers, they were also able to better understand how recording data reliably was fundamentally important.

D. Implementation

When beginning the questionnaire, enumerators would record the village name, sex of the interviewee, descriptive notes about the appearance of the household, date of the interview, the time the interview started, any concerns about the interviewee's attitude (were there any questions about the perceived enthusiasm of the interviewee to participate), apparent language barriers, and whether there were any other people (including children) present. Respondents were compensated with a small gift as a gesture of appreciation for participation. Gifts were chosen to be appropriate to the income level of the locality, such as a bar of soap, high-quality winter socks, or a thermos for tea. In the wealthiest municipality sampled (Suzhou, Jiangsu), villagers declined gifts.

We had the enumerators conduct the interviews in teams of two, generally one male and one female as a consequence of our own experiences with reliability and gender bias, and also accounts from other colleagues who had conducted surveys in China. Surveys in China often suffer from low quality responses and there have been incidents reported of fraudulent data where enumerators fill in the questionnaires themselves. In addition, since enumerators were

travelling to areas with which they were not familiar, we felt that it was important for enumerators to conduct each interview as a pair and to travel in small groups of three to five pairs (six to ten students). The safety of our enumerators was of utmost importance and we wanted to ensure that they would not be put in difficult or dangerous situations alone, particularly in the case of young women. Therefore, to ensure safety and improve reliability of the data collected, enumerators conducted interviews in pairs, generally a man and a woman. In rare cases, gender parity was not possible. In addition, most pairs included one person who could speak the local dialect to facilitate communication. We then grouped three or four pairs into a small team and each small team was responsible for the villages sampled in a particular municipality. The team travelled together and visited each village together. Each of the three groups in each province had one or two group leaders who had local knowledge, often some previous experience administering survey instruments, and most importantly, had demonstrated a clear understanding of methodological quality during the training. These leaders were in direct contact with Kerry and me daily and as problems or challenges arose, we worked with the teams to resolve them.

The target of the survey was both village leaders (village officials) and villagers. However, we had established through previous fieldwork that, while protocol for Chinese researchers suggested that research among villagers ought to be channeled through village leaders, there were no explicit rules requiring this method. I was told by a government statistician that she would have to approach the local village leader before speaking to the villagers, but I found that if I went by myself, both villagers and village leaders were unconcerned about this type of protocol. Moreover, we had experienced local officials' hand-

selecting villagers to participate in focus groups. In these cases, villagers would often look at the village leader before responding to questions and seek approval for their responses, yielding responses that parroted official slogans. In order to avoid village leaders either accompanying enumerators to conduct the interview or suggesting villagers to interview, we instructed each small group of enumerators to travel to villages together and interview village leaders and villagers simultaneously. One pair interviewed village leaders while the other three or four pairs interviewed villagers. By conducting the interviews simultaneously, we were able to prevent officials from influencing villagers' responses. If any village leaders objected to the survey, the enumerator pair responsible for interviewing the leader was then to call the other pairs and arrange that the group move onto the next village, so that we could avoid our groups running afoul of local officials. While we never encountered a hostile village leader, the enumerators were more comfortable knowing that they could make the judgment call.

In consultation with local collaborators, we determined that the most appropriate time to conduct the survey would be towards the end of the university winter vacation during Lunar New Year or Spring Festival, as it is generally known in China. This timing had two principal advantages. First, since enumerators were university students, they could participate in the project without disrupting their studies. Second, rural areas are generally in a state of festivities during this period. Therefore, villagers and officials have fewer work or farming-related demands. In addition, some migrant workers return home, allowing us to gain a fuller understanding of the dynamics of the village. While migrant workers were not the target of this project, those who were in the village at the time of the survey could have been chosen as

respondents. In accordance with the university schedules of our local collaborators, the survey was administered during the 2012 Spring Festival (February 2012).

There were only a few regions where enumerators encountered significant problems with response, and rather than line-item non-response, it would often be a problem of non-response through the whole or part of the questionnaire. In Suzhou (Jiangsu), the wealthiest municipality in the sample, enumerators reported that residents were standoffish, unfriendly, and often unwilling to participate in the survey. According to enumerators, because they were relatively wealthy, they were not enticed by the small gifts offered for participation. In Zhaotong Municipality in Yunnan, one of the poorest municipalities in China, enumerators were not always able to travel to the counties and villages in the sample and had to go to back-up localities instead, because of lack of infrastructure, bad weather, and precarious travel conditions, such as landslides. In Yuxi Municipality (Yunnan), some interviews were cut short because farmers were in the midst of a harvest and had to return to their crops after about 20 to 30 minutes. Kerry and I visited the groups in every municipality during the second or third day of the survey to check conditions, resolve problems, and review the survey data-gathering methods. We met with each group in a nearby urban center, rather than in the village. Consequently we were able to address logistical or attitudinal problems directly without introducing bias from the presence of a foreign researcher. In place such as Zhaotong and Suzhou, where more systemic issues emerged, we were able to adapt the schedule and work with the enumerators to maximize data collection without compromising methodological quality. In general, the completion rate was very high, even for questions that may be deemed politically sensitive or personal, and the instrument typically took about 50 minutes to complete.

E. The Data: Limitations, Questions of Bias and Protecting Participants

Social science research in China remains challenging, despite increased openness to policy evaluation research and greater dissemination of social scientific research methods in Chinese universities. Because China's political system is authoritarian and economic development is uneven, access to information is highly contingent on local politics and the reliability of official statistics is dubious. The logistical challenges of conducting research in a developing country can be significant but can be resolved with proper planning. The lack of political freedom, however, generates two major obstacles to research. First, interviewees are less likely to give honest and complete answers because of the potential for pressure and retribution from local officials; in poorer populations, among which I conducted the majority of my research, individuals are even more vulnerable as they are dependent on the benevolence of local officials. Second, as mentioned previously, research by foreign nationals is becoming increasingly restricted. In Yunnan, where there is a high density of foreign NGOs and researchers, the regulations are even stricter as the provincial government has interpreted the Measures for the Administration of Foreign-Affiliated Surveys. Finding a Chinese academic partner, one who was willing to go on record as helping to conduct a social policy-related survey in rural Yunnan was quite challenging. We ended up with two partners: one university professor who was willing to help us identify and organize students who could serve as enumerators and one researcher at a government academic institute who was willing to file the paperwork and go on record as a partner and review the survey instrument, but only that. Both partners were invaluable, and we would not have been able to complete the survey without either of these roles

and their work on our behalf. At the same time, they served as an example of the politically sensitive issues we had to navigate and the clear inconsistencies in how the regulations may be interpreted differently by even different (and well-informed) academics.

In addition to seeking to avoid certain types of bias (selection, gender, sampling), the one that raised the most concern was non-response bias. To the extent that there was non-response, whether item non-response or selected individuals refusing to participate in the survey, one may argue that villagers who are more satisfied with the regime would be more likely to participate: people in communities that have suffered extreme political repression may be reticent to respond openly to a survey. Despite having taken precautionary measures to reduce bias introduced by, for example, the presence of local officials during interviews with villagers, we could not completely eliminate the possible effects of political repression in the context of an authoritarian regime. While this is possible, enumerators also consistently found that villagers who had a problem with government (local or national) would try to complain to them and try to get enumerators to intervene or inform the media on their behalf. On several occasions, enumerators had to explain that they were there in only a research capacity and not to lobby on behalf of villagers. This experience was consistent with our respective independent qualitative research. Therefore, while acknowledging that we were more successful than we had hoped, we must still interpret the results with caution and assume that there may be some bias in favor of the government. Another way in which we sought to reduce this bias was to ensure that the majority of questions in the survey instrument were not generally considered politically sensitive. Those questions that may be considered politically sensitive were relegated to the final section of the instrument. Although bias from political pressure is not completely unavoidable (much as

pressure to deceive enumerators for social, psychological, or political reasons would be present in a democratic setting), we sought to reduce this as much as possible. Significant proportions of respondents were willing to rate the government (local and national) unfavorably in different categories, suggesting that many respondents were willing and able to express their views, including negative opinions of the government.

Overall, our sample of villagers roughly reflects the demographic composition of rural China (Tables 2, 3, and 4). There is one noticeable discrepancy, however, that could have implications for our analysis: our enumerators disproportionately interviewed communist party members. Communist party members comprise about 6 percent of the population in China (and much less in rural areas), but 9 percent in our sample of villagers. This slight over-representation of relatively "elite" villagers certainly affects inference drawn from our survey data. However, the over-representation of CCP members does not preclude useful analysis of these data. CCP members tend to be more politically active, more educated, but also more critical of state policies. In addition, as CCP members are leaders in their communities, I expect that their views have a greater effect on other villagers and the potential for anti-government action than non-CCP members. Therefore, by including a slightly higher proportion of CCP members than is representative, our survey data more closely reflect the positions of those villagers who play a leadership role in their communities. Also, party membership is always used as a control variable in my analysis and, thus, I do not anticipate that this would preclude inference from our data.

IV. Conclusion

The archival and fieldwork research for this dissertation was an integrated multi-stage and multi-method collaborative project. Although it was not my original intent that such collaboration be a part of my research, there is no question that the caliber of this project's data is the stronger for it. When we go into the field as scholars, we know that no single social science research method is a panacea for addressing political questions. Political science cannot be isolated in a lab, safe from contamination from other factors. Consequently, scholars strive to select the best methods available to answer our questions and adapt to the circumstances presented. Even with a well-developed plan, challenging fieldwork environments can complicate research designed before entering the field; certainly research in rural China presents both political and logistical obstacles that demand flexibility despite the pursuit of methodologically pure analysis and data-gathering. The adaptation of this research in the independent portion, and the shift to include a collaborative survey component was the best method I could utilize to minimize the impact of those obstacles and maximize methodological rigor.

APPENDIX B. ENVIRONMENTAL HISTORY

In regions where human communities were more static, the relationship with nature was also more static. Stable political boundaries were established by the continued integrity of territory governance—even as boundaries shifted between states, many of these territories would shift hands wholesale, without disturbing the communities within the territory borders. The history of static Chinese settlements stretches back into the Neolithic era. Evidence of village communities and structures dated to 5000-3000 B.C.E. have been found in the area around Xi'An. The relationship between humans and nature in modern China, particularly Han farmers and the land they cultivate, has a very long, very consistent history stretching back to the beginnings of Chinese civilization. There have been some significant disruptions, such as the upheavals of the 20th century (which are discussed below), but that dynamic is still powerful and present.

As mentioned above, the present bounds of China supported continuous human settlements and cultivation for thousands of years. Although population growth has required increasing yield and territory, the core regions, mostly centered within the Yellow River Basin, have been farmed continuously since before 2200 B.C.E. (Kusuda 2010). Secure within the bounds of subnational territories, farming communities stayed where land was best suited to agricultural production whether national borers shifted or otherwise. (Elvin, 2004) Land management for the majority of that period was geared toward exploiting and controlling natural resources, including optimal farmland, in the effort to gain regional competitive advantage over permanent settlements (Economy, 2005; 2004; Elvin, 2004). The cultural emphasis on large clans demanded increasing swaths of territory, however, as sons needed their own land to extend a clan's reach,

communities looked beyond land already suitable to cultivation up the hillsides. Trees and rocks could be removed, after all. This creep of permanent farmland meant deforestation and erosion, and increasing sedimentation of water systems downhill (Ma, 2003). In some cases, land was completely reshaped to suit human need. Rice cultivation, for example, requires a perfectly level field that allows water flow to be evenly distributed and precisely controlled. In the south, where rice has long been the primary gain crop, flat terraces were carved into hillsides to accommodate rice cultivation. Moreover, rice requires enormous amounts of water that are less accessible at higher altitudes. Irrigation systems rerouted mountain streams and diverted rainwater drainage away from rivers and lakes. As the population continued to increase, farmers moved higher and higher, reshaping the land as they went. Increased deforestation increased rates of sedimentation and decreased water flow to water systems used for irrigation in farmland downhill and downstream. These practices have altered the courses of many of China's great rivers and the shores of lakes. Flooding and mudslides have increased. Often to protect settlements and maintain agricultural production, lowland farmers and government have sought to reassert control through engineering feats—dams, dredging, dykes, and canals—with some success, but also with long-term consequences for the environment and human lives and livelihoods.

Land management over the last three thousand years was geared toward exploiting and controlling natural resources in the effort to gain regional competitive advantage over permanent settlements (Economy, 2005; 2004; Elvin, 2004). The agricultural policies entailed intense farmland cultivation and a reluctance to relocate settlements (Elvin, 2004). The spread of permanent farmland meant deforestation and erosion, continued for more than a thousand years in some places. (Ma, 2003) When tributaries dried up, or lakeshores shifted, water was rerouted

and redistributed through various means. The Yellow River is primary example; while it is only in the last decade that it has ceased to flow to the sea, the roots of this development go back two thousand years. The extensive dyke system that slows and distributes much of the water was constructed in order to address sedimentation he construction of dykes to prevent flooding. This in turn, leads to more sedimentation, thus blocking the river's egress (Ma, 2003).

APPENDIX C. LEGAL HISTORY OVERVIEW

China's formal legal history was relatively homogenous until the late 19th century. Confucius' influence on legal thought in China was critical. Under the Qing dynasty, there was a fully functioning, largely consistent civil code that depended on the Confucianist system of *li,* as had as its pre-Qing predecessors (P. Huang 1994). The *li*, sometimes translated as "rites, customs or propriety," were "defined as rules of behavior varying in accordance with one's status defined in the various forms of social relationships … [and] were formulated by Confucianists for this purpose" (Ch'U 1965: 231). Under the Qing Code, although argued by some to be a strictly criminal code, civil law flourished. While there were inconsistencies and abuses of the system, the Chinese populace generally had access to arbitration and protection under the law for civil disputes.

Towards the end of the Qing dynasty, efforts were made to overhaul the legal system for several reasons. First, the growing influence and power of foreigners in China, and the legal protections they brought with them to prevent Chinese interference motivated the government to modernize the legal system.[84] Japan's success in "throwing off the yoke of extraterritoriality" influenced the perception that a modern legal system would strengthen China's position with foreign powers. The Treaty between China and the United States Respecting Commercial Relations provided further incentive: when China reformed its judicial system to meet Western standards, the United States would "be prepared to relinquish extra-territorial rights when satisfied that the state of the Chinese laws, the arrangements for their administration and other

considerations warrant it" Ch'U 1965: 230). The resulting efforts drew on the American and Japanese models (the latter based in part on the German model).

When the Qing fell in 1911, the results of their reforms, a first draft of a civil code, were thrown out. Instead, the Guo Min Dang (KMT) created another new draft that included customary laws generally excluded from the Qing version, and combined the commercial and civil codes into one code (Chen 1999). Although the KMT never consolidated control over all of China, its legal reforms represented certain indigenization of civil law that had been somewhat lacking in the Qing dynasty's reform efforts. The KMT fled to Taiwan, and Mao Zedong and the new CCP were eager to reject the KMT and its policies (Tan 2005).

When scholars debate the features of China's modern legal system, the narrative often begins with Deng Xiaoping's "opening-up" reforms. However, despite the broad-scale destruction of legal institutions during Mao Zedong's tenure, the current system and the course forward are shaped by the legal institutions, alternative dispute resolution mechanisms and law's perceived role in daily life and politics that derive from pre-Mao periods, and from practices and norms under Mao.

Mao Zedong's China was a wasteland for the rule of law from many perspectives. Although initially philosophically aligned with the Soviet Union, the CCP was never satisfied with the Soviet legal system, finding that the "philosophy of struggle" rooted in Lenin's and Marx's theories of revolution was far more compatible with the practices of informal proletarian justice that predominated during the 1950s (Lo, 1995). According to Mao, legal institutions used by a state to govern were antithetical to the necessary struggle of the proletariat—they were "an instrument by which one class oppresses another. It is an instrument for the oppression of

antagonistic classes; it is violence and not 'benevolence.'" By contrast, law itself could serve to aid class struggle or economic development—whichever was deemed the political imperative of the moment—and the pursuit of such an imperative could not then in turn be limited or governed by law (Damaska, 1991); (Lo, 1995). During the One Hundred Flowers Campaign, 1956-7, the CCP encouraged critique of the government, but the critiques that emerged were more severe than Mao had envisioned. The campaign was brought to an abrupt end, followed by the Anti-Rightist Campaign, which began a deliberate dismantling of legal structures and the condemnation of legal elites (Saich, 2010).The destruction of the legal apparatus was renewed with the onset of the Cultural Revolution, 1966-1977 (Saich, 2010). Some legal institutions did endure through the worst of Mao's attacks on legal institutions: in at least two provinces, county-level courts managed to continue to function (Hurst, 2015). Nevertheless, by the end of Mao's reign, the legal system was in shambles overall (Lubman, 1999).

When Deng Xiaoping assumed leadership at the end of the 1970s, he identified legal development and institutionalization as necessary to economic development, stressing "the need to expand socialist democracy and strengthen the socialist legal system." (Deng 1984) Though wary of the ideological fervor that had defined the Mao era, Deng was nevertheless cautious about giving up the party's discretionary power, and sought to balance legal development with political control. As a result, the laws formulated under Deng, including the 1982 Constitution, continued as instruments of the political imperative to serve the interests of the people as embodied by the People's Republic of China, even though Deng himself may have seen a need to shift to stricter rule of law in some sectors . Deng's legal and political reforms created the foundation for the extraordinary transformation from Mao-era remnants to the current formal

system. Law schools reopened in 1978. The Ministry of Justice, which had been abolished in 1958, was re-established in 1979. In the mid-1980s, the CCP promoted “law dissemination” (*pufa*) campaigns, which rapidly increased demand for legal services nationally. Thousands of laws and regulations have been promulgated. As of 2011, the total number of judges in all courts had reached 195,000.

APPENDIX D. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS, HEPS SURVEY

Table D.2. Age of Respondents

	Obs	Mean	Standard Deviation	Minimum	Maximum
Jiangsu					
Villagers	257	48.03	14.19	19	93
Village Leaders	105	44.69	11.75	21	81
Hubei					
Villagers	290	48.26	13.81	17	87
Village Leaders	97	46.46	11.79	24	86
Yunnan					
Villagers	243	43.57	16.63	17	81
Village Leaders	87	45.02	8.43	25	67

Table D.1. Demographic Characteristics of Respondents

	Jiangsu		Hubei		Yunnan		Total	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Villagers								
Women	118	46%	134	46%	129	51%	381	48%
CCP	22	9%	32	11%	17	7%	71	9%
Ethnic minorities	0	0%	28	10%	47	19%	75	9%
Total	258	100%	292	100%	251	100%	801	100%
Village Leaders								
Women	20	19%	27	28%	10	11%	57	20%
CCP	85	80%	80	82%	68	78%	233	80%
Ethnic minorities	0	0%	8	8%	16	18%	24	8%
Total	106	100%	97	100%	87	100%	290	100%

Table D.3. Education Levels of Respondents

	Jiangsu		Hubei		Yunnan		Total	
	Villagers	Village leaders	Villagers	Village leaders	Villagers	Village leaders	Villagers	Village leaders
1: No schooling	16%	2%	8%	1%	19%	0%	14%	1%
2: Primary school	25%	5%	26%	5%	32%	8%	28%	6%
3: Junior high school	35%	20%	40%	36%	31%	48%	36%	34%
4: High school	19%	41%	20%	41%	11%	39%	17%	40%
5: College and above	5%	32%	4%	17%	6%	5%	5%	18%
6: Other*	1%	0%	1%	0%	1%	0%	1%	0%

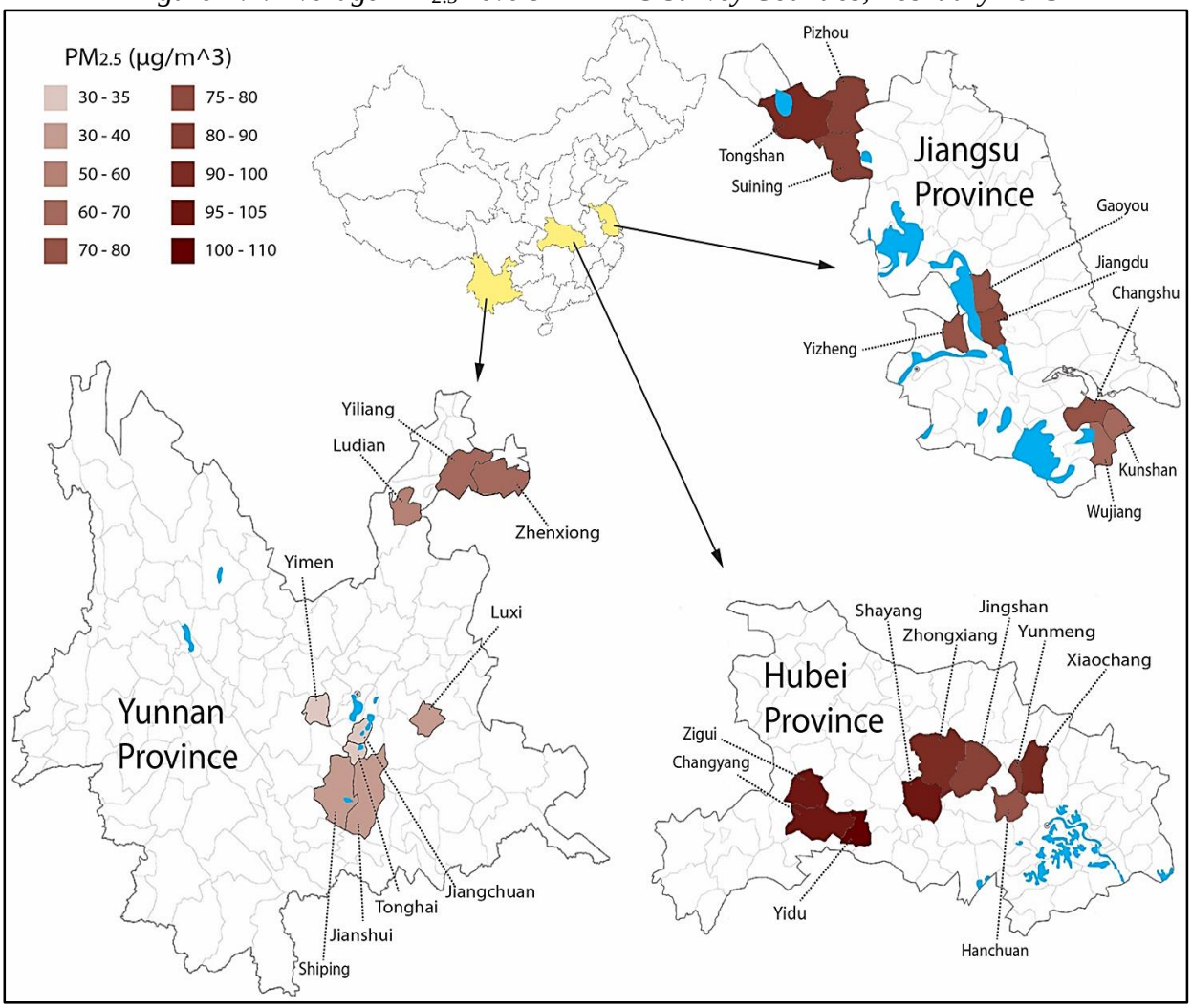
*Responses to 6 included three graduate or professional school responses, 5 descriptions that were unclear, and one "self-educated" response

APPENDIX E. POLLUTION LEVELS IN FIELDWORK REGIONS

Table E.1. Water Quality Ratings in Yunnan's Plateau Lakes

	2008	**2009**	**2010**	**2011**	**2012**	**2013**
Qilu	>V	>V	>V	>V	>V	>V
Yilong	III	>V	>V	>V	>V	>V
Dian	>V	>V	>V	>V	>V	>V
Xingyun	>V	V	>V	>V	>V	>V
Yangzong	II	V	IV	III	IV	IV
Cheng	III	III	III	III	V	>V
Er	II	III	III	II	II	II
Fuxian	I	II	I	I	I	I
Lugu	I	I	I	I	I	I

Figure E.1. Average $PM_{2.5}$ Levels in HEPS Survey Counties, February 2015



APPENDIX F. TRUST, DISTRUST, AND NON-SUBSTANTIVE RESPONSES

Figure F.1. Political Trust and Distrust Rates among Villagers

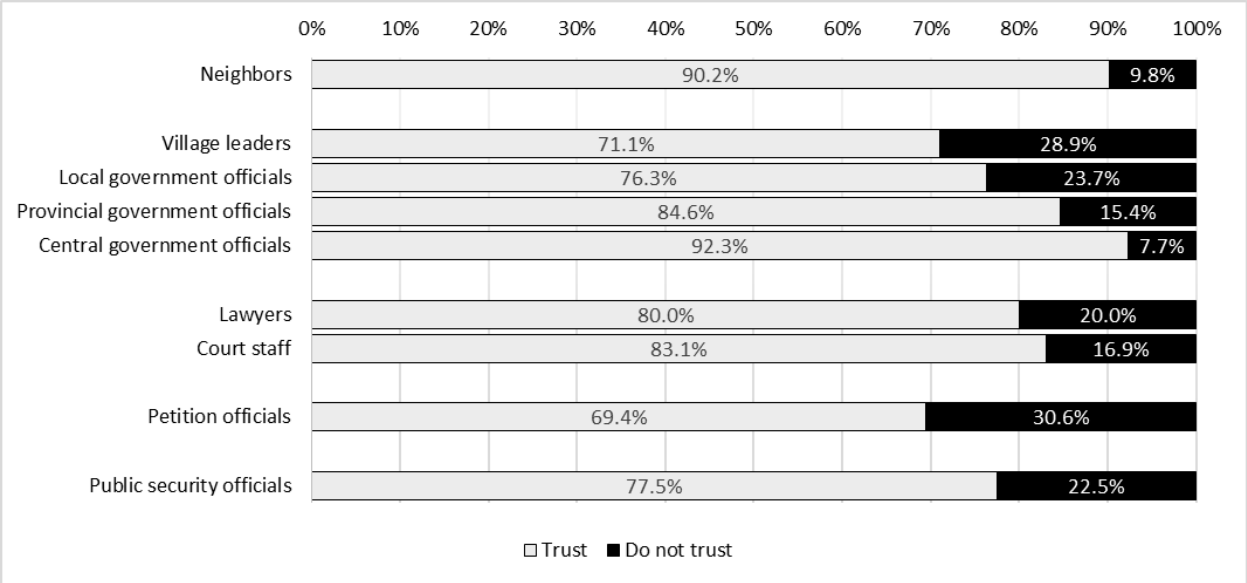
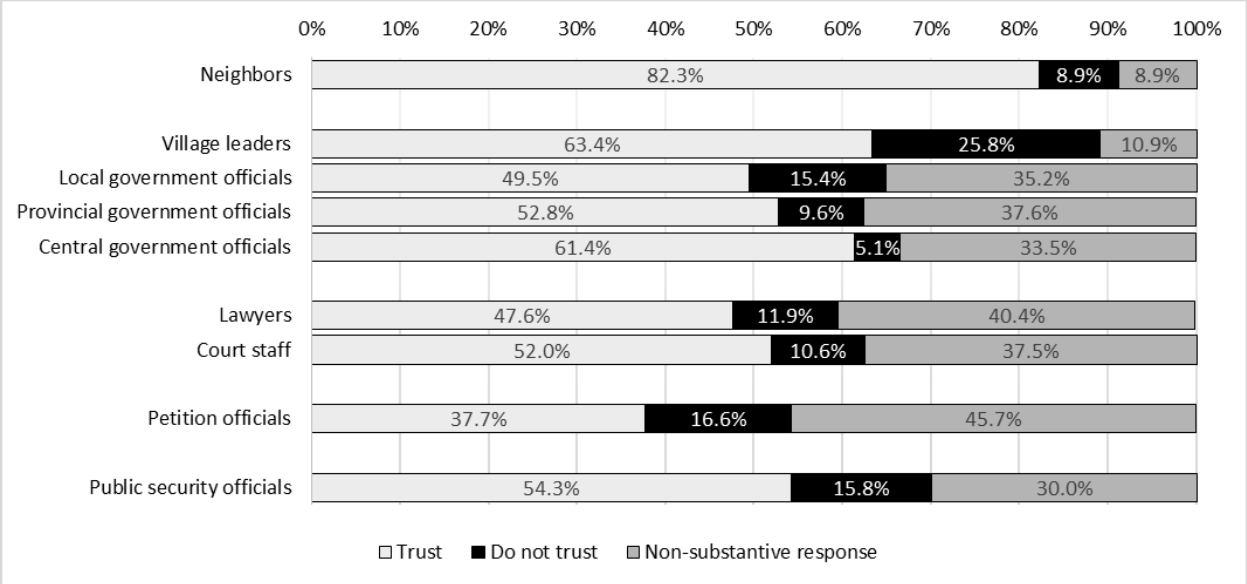


Figure F.2. Political Trust, Distrust and Non-Substantive Responses among Villagers



N = 801. Source: HEPS Survey.

APPENDIX G. ENVIRONMENT-RELATED PETITIONS AND LEGAL DISPUTES

Table G.1. Environmental Petitions (Letters and Visits)

	2006 Visits					
	Total People Visits	Total Batch Visits	Total Visits Processed			
PRC Total	110,592	71,287	62,166			
Jiangsu	6,869	3,354	707			
Hubei	5,697	4,052	4,052			
Yunnan	4,899	3,288	2,070			
	2007 Visits				2007 Letters	
	Total People Visits	Total Batch Visits	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC Total	77,391	43,909	42,832	123,357	116,149	158,981
Jiangsu	7,884	4,114	2,558	5,486	5,473	8,031
Hubei	3,660	1,717	1,646	4,817	4,634	6,280
Yunnan	1,328	740	715	587	491	1,206
	2008 Visits				2008 Letters	
	Total People Visits	Total Batch Visits	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC Total	84,971	43,862	40,748	705,127	660,665	701,413
Jiangsu	3,578	938	923	57,396	57,031	57,954
Hubei	4,115	2,431	2,384	27,993	27,783	30,167
Yunnan	7,034	3,045	2,886	8,842	8,148	11,034
	2009 Visits				2009 Letters	
	Total People Visits	Total Batch Visits	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC Total	73,798	42,170	40,633	696,134	644,296	684,929
Jiangsu	3,119	1,354	1,332	58,407	57,521	58,853
Hubei	5,370	2,347	2,221	29,411	28,620	30,841
Yunnan	2,967	1,991	1,806	12,084	11,819	13,625
	2010 Visits				2010 Letters	
	Total People Visits	Total Batch Visits	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC Total	65,948	34,683	32,887	701,073	654,833	687,720
Jiangsu	2,354	1,123	1,083	63,009	61,755	62,838
Hubei	4,276	2,364	2,198	26,170	24,142	26,340
Yunnan	2,635	1,651	1,383	8,998	8,602	9,985
	2011 Visits				2011 Letters	
	Total People Visits	Total Batch Visits	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC Total	107,597	53,505	NA	201,631	NA	251,607
Jiangsu	6,430	3,605		11,068		15,562
Hubei	4,907	2,907		10,991		15,725
Yunnan	3,905	2,271		4,674		6,754
	2012 Visits				2012 Letters	
	Total People Visits	Total Batch Visits*	Total Visits Processed	Total Letters	Total Letters Processed	Total L & V Processed
PRC	96,145	53,505	NA	107,120	NA	159,283
Jiangsu	5,270	3,605		8,165		14,972
Hubei	4,855	2,907		6,010		10,058
Yunnan	4,016	2,271		2,118		3,862

* Data falsification: same numbers as used for previous year (2011)

Table G.2. Environment-Related Formal Legal Disputes, 2007-2012

	2007 Admin. Violations		2007 Admin. Reviews		2007 Litigation Cases		2007 Criminal Cases	
	Total	**Processed**	**Total**	**Processed**	**Total**	**Processed**	**Total**	**Processed**
PRC	109,074	101,325	521	435	242	199	6	3
Jiangsu	13,733	13,268	41	39	24	18	1	0
Hubei	1,262	898	10	9	2	1	0	0
Yunnan	2,378	884	5	5	1	0	0	0
	2008 Admin. Violations		**2008 Admin. Reviews**		**2008 Litigation Cases**		**2008 Criminal Cases**	
	Total	**Processed**	**Total**	**Processed**	**Total**	**Processed**	**Total**	**Processed**
PRC	94,897	89,820	528	428	207	146	4	2
Jiangsu	7,535	7,354	28	25	16	12	1	0
Hubei	1,363	903	2	2	0	0	0	0
Yunnan	685	603	5	4	2	1	1	1
	2009 Admin. Violations		**2009 Admin. Reviews**		**2009 Litigation Cases**		**2009 Criminal Cases**	
	Total	**Processed**	**Total**	**Processed**	**Total**	**Processed**	**Total**	**Processed**
PRC	78,788	73,719	561	465	249	249	5	3
Jiangsu	9,892	9,512	54	32	53	41	4	2
Hubei	998	728	12	6	2	5	0	0
Yunnan	520	537	4	4	1	3	0	0
Note: In Yunnan Province for 2009, more Admin. Viols. & Lit. Cases were reported to have been processed than the total								
	2011 Admin. Violations		**2011 Admin. Reviews**		**2011 Litigation Cases**		**2011 Criminal Cases**	
	Total	**Processed**	**Total**	**Processed**	**Total**	**Processed**	**Total**	**Processed**
PRC	119,333	NA	838	NA	NA	NA	NA	NA
Jiangsu	6,172		29					
Hubei	1,609		1					
Yunnan	1,423		3					
Note: Yearbook data were not available for 2010								
	2012 Admin. Violations		**2012 Admin. Reviews**		**2012 Litigation Cases**		**2012 Criminal Cases**	
	Total	**Processed**	**Total**	**Processed**	**Total**	**Processed**	**Total**	**Processed**
PRC	117,308	N/A	427	N/A	N/A	N/A	N/A	N/A
Jiangsu	5,002		12					
Hubei	1,209		2					
Yunnan	865		2					

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