Down to Earth

Environmentalism, Bureaucracy, and the Quest for Good Governance in China

By

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Last but not the least, I dedicate this dissertation to my beloved wife, Yuan Yao, who is the voice of reason, compassion, and love during all these years we share.

Note on Transliteration and Translation

The *pinyin* system is widely employed in the People's Republic China. Other systems, most notably the Wade-Giles, were used in sinology works prior to the adoption of *pinyin*, and are still in use outside of Mainland China, such as Taiwan and Hong Kong. Given this dissertation's focus on contemporary environmental politics in the People's Republic of China, I adopt the *pinyin* system as the primary form of transliteration. Occasionally, the Wade-Giles equivalent is given in parentheses when the term has been commonly transliterated using the Wade-Giles system in the academic literature, such as the *Guomindang (Kuomintang*).

Quotations from published works, documents, field notes, and audio recordings in Chinese are my own translations. I give the *pinyin* of the original Chinese for special terms, when their use may cause confusion.

Abbreviations

CAS	Chinese Academy of Sciences
CASS	Chinese Academy of Social Sciences
CNKI	China National Knowledge Infrastructure
DG Energy	Directorate-General for Energy (of the European Union)
DOE	Department of Energy (of the United States)
EUD	European Union Delegation (to China)
KPI	Key Performance Indicator
MoHURD	Ministry of Housing and Urban-Rural Development (of China)
NDRC	National Development and Reform Commission (of China)
UGB	Urban Growth Boundary

Abstract

Environmental protection is a central problem in development. In recent decades, an increasingly diverse group of local, national, regional, and transnational actors have created a complex set of institutions to enable environmental governance. While the field of environmental governance is becoming more expansive, the national state still plays a central role in shaping environmental policy outcomes.

This dissertation examines the bureaucratic process in China through which environmental policies are made. I bring together historical circumstances, domestic bureaucratic dynamics, and transnational political forces to explain the current state of environmental governance in the most populated nation on earth. Methodologically, this dissertation draws from archival and ethnographic research. During archival research, I delved into the collection of published articles by Chinese scholar-officials since 1949, when the People's Republic of China was founded. Additionally, I conducted ethnographic fieldwork in the Chinese Ministry of Housing and Urban-Rural Development (MoHURD) from December of 2013 to December of 2014.

I conclude that under the authoritarian political framework, the Chinese state depends on a narrow set of bureaucratic tools for environmental policy-making. Specifically, these tools enable Chinese state actors to transform complex ecological relationships into measurable and predictable quantitative indicators for policy-making. I demonstrate that this process of quantification, which may seem similar to policy processes elsewhere, is deeply entangled with the historical evolution of the Chinese party-state bureaucracy. Furthermore, the

history of the party-state interacts with contemporary politics of international development to consolidate the use of quantitative instruments in Chinese environmental governance. This dissertation articulates the confluence of historical, domestic, and international forces that gives rise to authoritarian environmentalism.

This discussion of authoritarian environmentalism furthers our understanding of the difficulties with which political institutions handle environmental affairs. It also contributes to an understanding of environmental state as a bureaucratic process, bridging the work of environmental and political sociologists.

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Chapter 1. Leviathans in Anthropocene

The magnitude of human impacts on Earth has led to major transformations of the physical and geological landscapes. The unprecedented scale of anthropogenic changes has led many to embrace the notion of the "Anthropocene." In an article that widely popularized the concept, climate scientist Will Steffen and his associates define the Anthropocene as the geological epoch where "[h]uman activities have become so pervasive and profound that they rival the great forces of Nature and are pushing the Earth into planetary terra incognita" (Steffen, Crutzen, & McNeill, 2007: 614). The authors further pinpoint the onset of industrialization as the start of the Anthropocene. We are, in other words, more than two centuries into the Anthropocene. In much of the past two centuries, rapid growth of the world population, urban areas, industrial activities, natural resource extraction, global trade, and energy consumption has placed unprecedented burdens on the planet's ecological capacity (Ponting, 1991).

In the last few decades, the Anthropocene is increasingly marked by not only the salience of human activities, but also the rise of organized political activities that target the relationship between human societies and the natural environment. They initially manifest only in the form of environmental movements during the 1960s. Over the years, environmental protection has become one of the core areas of policy-making across the world, taking the center stage in national and international political agendas. This latter form of organized political attempts, one that is backed by power and political resources, is the primary object of inquiry in this dissertation.[1]

Political Interventions in Nature

Sociologists have been fascinated by state interventions in environmental issues for quite some time, and the fascination is growing as an increasing number of nations across the world jump on the bandwagon of environmental protection (Janicke, 2006; McMichael, 2012; Hironaka, 2014). Studies have shown that state environmental activities have been on the rise, whether measured as participation in environmental treaties (Roberts, 1996), acceptance of environmental non-governmental organizations (Frank et al., 2000; Gough & Shackley, 2001), the number of national parks and protected areas (Brockington, Duffy, & Igoe, 2008; Frank et al., 2000), or as institutionalization of national environmental ministries (Frank et al., 2000).

Environmental sociologists have debated the rise of the environmental state, or whether modern nation-states have successfully transformed to take on environmental protection responsibilities. The treadmill of production theory, a Marxian-inspired tradition in environmental sociology, argues that the state has a limited role to play in the development of a truly "green" economy, because "the major motives behind environmental policy-making are economic" (Schnaiberg, Pellow, & Weinberg,2002: 15-16). On the contrary, the ecological modernization theory posits that modernization has a self-corrective capacity to prompt solutions to environmental degradation thanks to technological innovation and increasing public awareness. They famously argue that the transformation from "the dirty and industrial caterpillar into an ecological butterfly" is well underway (Huber, 1985: 20, cited and translated in Spaargaren and Mol, 1992).

The empirical literature inspired by these two theoretical perspectives has helped to articulate some of the theoretical premises, though the debate remains largely unresolved.

Studies of "green" businesses (Weinberg, 1998), and of the recycling industry (Weinberg, Pellow, & Schnaiberg 2000; Pellow, Schnaiberg, & Weinberg, 2000) have demonstrated the equity challenges of environmental governance, leading to the conclusion that the environmental state is incompatible with capitalism. Other studies lend more support to the ecological modernization theory, showing that some of the best practices of ecological conservation, especially those from European nations, signal promising transformations towards the environmental state (Spaargaren, Mol, & Buttel, 2006).

While ecological modernization proponents highlight "changes-in-the-making in the main institutions" of the state (Mol and Spaargaren, 2002), treadmill-of-production theorists question whether such changes have altered the fundamental capitalist organization of production (Schnaiberg, 1980). In other words, the disagreement lies in their contrasting assessments of similar empirical observations (Schnaiberg, 1997; Redclift, 1987). In the final analysis, both sides of the debate have accepted the basic premise that the modern nation-state has gone through institutional transformations in the direction of environmental protection. Some more recent empirical analysis finds support for both theoretical perspectives, and calls for research to better account for the international dynamics that undergird the centrality thesis (Jorgenson and Clark, 2012).

Quite truthfully, national states are by no means the only locale where environmental actions take place. Some argue that conventional boundaries of the city and state seem to fade away when it comes to governmental responses to environmental issues, leading to "a new spatial imagination" of governance (Marsden, 2011). Case studies of environmental governance in Canada and Australia (Jones, 2012), Chile (Barton, 2013), Holland (Kokx, 2011)

and China (Li, 2012) all call for analytical units beyond the conventional treatment. This emerging trend, while still in debate, has been referred to as networked governance (Brownill & Carpenter, 2009), multilevel governance (Bulkeley & Betsill, 2013), or hybrid governance (Fisher & Svendsen, 2014).

Other scholars, however, are unconvinced that the focal center of environmental governance has shifted away from national states. For example, international environmental treaties can be, and often are, blocked by a few nations adamant on their terms, not to mention inconsistencies of self-enforcement among signatories (Barrett, 2005). Likewise, the current stalemate of international climate negotiations is largely seen as the result of the "triple inequality" of responsibility, vulnerability, and mitigation experienced by different nation states in the global North and South (Roberts & Park, 2007). Observations such as these lead the historian Robert Kagan to argue that a new international order is but "a mirage" (Kagan, 2008: 3). While disagreeing with Kagan's sweeping assertion, the British sociologist Anthony Giddens nevertheless recognizes that the role of nation-states in climate politics faces challenges from an increasingly diverse set of actors (Giddens, 2011).

Environmental Intervention as a Bureaucratic Process

It should be recognized that regardless of whether the analytical focus is placed on the national level or the transnational level, domestic and international factors should not be, and typically are not, mutually exclusive. Instead of pre-determining the level and unit of analysis, this dissertation adopts an approach that remains open to all scales. It treats environmental intervention first and foremost as an inherently bureaucratic process, which involves multiple sources of information, multiple levels of processing, and multiple locales of decision-making.

The extent to which a given factor figures more prominently than others at a given historical moment and geographical locale is, after all, an empirical question. This approach follows a long-standing tradition in organizational sociology. It recognizes that organizational decision-making is based on limited information and driven by bounded rationality (Cyert & March, 1963). In particular, it takes as given that information consumes the attention of decision makers (March & Simon, 1958). Therefore, organizations depend on various kinds of bureaucratic procedures to filter flows of information, assign priorities, and enable decision-making in circumstances where perfect information is not possible (Simon, 1982).

While this process-oriented approach has been applied to studies of the state in the past (Allison, 1971), it is more widely used in studies of the firm. In particular, the "natural-resource-based view of the firm" (Hart, 1995; Hart & Dowell, 2010) has inspired a substantial literature that examines the relationship between pollution prevention and firm profitability. Firms adopt environmental standards, invest in sustainability initiatives, and commit to "green" business practices for a variety of reasons (Bansal, 2005; Bansal & Roth, 2000). Apart from the obvious factors of cost reduction, technological advances, and brand image, scholars have identified certain aspects of the organizational structure of the firm that make it more receptive to pro-environment programs. Specifically, scholars refer to "dynamic capabilities" of the firm, which "continuously create, extend, upgrade, protect, and keep relevant the enterprise's unique asset base" (Teece, 2007: 1319). Such dynamic capabilities manifest themselves in organizational features that foster innovation and capture emerging market opportunities (Winter, 2003). These same organizational features predispose firms to be more sensitive to environmental impacts of business activities, making them more likely to adopt higher environmental standards (King & Lenox, 2002). By adopting the process-oriented approach, this

literature fleshes out the otherwise obscured features in the organization of private firms that predispose organizational decision-makers to attend to environmental impacts.

While substantive findings about firm behaviors may not directly cross-fertilize studies of state environmental activities, the empirical literature nevertheless offers a valuable epistemological stance that embed bureaucratic decision-making in the complex web of relations within and without the organization (whether the firm or the state). This approach leads the investigator to be sensitive to different (and sometimes competing) objectives of the bureaucracy, its internal structures, and external relations with other organizations. It situates the bureaucratic decision maker in the relational complexities that often characterize the quotidian experience of a bureaucracy. It recognizes that each instance of environmental decision-making represents a confluence of inputs from multiple sources, although some may appear more salient than others. In other words, the bureaucratic process necessarily entails multiple sources of information and multiple points of decision-making. While each alone may be able to explain one particular outcome at a given moment, when taken together, the jointly reproduce the thought processes whereby organizational decisions are arrived at.

By treating environmental governance as a bureaucratic process, I attend to the interaction of historical, local, national, as well as international forces that jointly shape each and every outcome of interest. The appeal of this process-oriented approach is its ability to, on the one hand, integrate existing studies of environmental governance at different scales into a general framework of analysis, and on the other hand, bring into dialogue studies of environmental movements, environmental non-governmental organizations (NGOs), polluting firms, and of international environmental treaties. What may seem like a disparate group of

environmental actors is, after all, inevitably interactive amongst themselves in the real world. In this sense, the framework presupposes the principle of equifinality, which asserts that the same outcome can be reached from different paths (Katz & Kahn, 1966), or the proverbial "all roads lead to Rome."

Environmental Governance: The Beaten Paths

Some roads to environmental governance are better studied than others. The next few chapters provide more detailed reviews of several strands of literatures; I shall briefly touch on some of the major themes here. Some empirical work examines the relationship between environmental movement strategies and environmental policy outcomes (Jamison, 2001; Dryzek et al., 2002; Pellow, 2007). These inquires closely examine different movement strategies, ranging from the most confrontational to the more consensual. This body of work helps to understand different levels of influences environmentalists have had on state policies. It also enables us to appreciate environmental movements as an increasingly diverse enterprise, growing out of the initial focus on conservation (Dunlap & Mertig, 1991), toward an integrated approach to environmental justice (Guha, 1989; Pellow, 2000), and more recently, incorporating an even wider set of social and institutional interests (Clapp & Dauvergne, 2011).

This explanatory route, established as it is in the academic literature, is yet to fully account for cases of non-democracies. Environmental activists in China, for example, tend to depoliticize themselves to avoid being perceived as a threat to political stability (Ho & Edmonds, 2008). Similarly, few environmental movements gain nationwide media attention, thanks to state suppression and media self-censorship (van Rooij, 2010). However, this does not mean that environmental sensibilities in general, and environmental activism in particular, have no bearing

on environmental policies in China. For example, some local garbage protests have reportedly been rather successful in exerting influence on the local state (Weller, 2006). Environmental protesters have also been shown to be more likely to distrust the Chinese state (Zhang & Hwang, 2016). Yet, Chinese state policies does not appear to be responsive to environmentalist sentiments in the nation, as far as current data show (Shapiro, 2016). It suggests that what appears to be a highly salient factor in shaping the bureaucratic process in some nations may not be nearly as salient in the non-democratic context of China. Meanwhile, other factors which appear benign in democracies could be at full force in shaping Chinese environmental politics.

In addition to environmental movements, the sociological literature has also offered explanations of state environmental activities from the perspective of a governance culture in the "world society" (Thomas & Meyer, 1980; Boli & Thomas, 1999; Longhofer & Schofer, 2010; Hironaka 2014). Scholars argue that boundary-transcending values give rise to a consistent set of globally accepted cultural norms. The normative power of these higher values helps disseminate particular forms of governing institutions and practices that match onto said values. Sustainable development, they argue, is the latest manifestation of such transcending values, leading national states to adopt environmental policies (Boli and Thomas, 1997). However, recent work begins to question some of theoretical assertions (Buttel, 2000; Uekötter, 2014; Rocca, 2015). The world society theory may have been particularly successful in explaining the development experience in the post-war era, but its contemporary relevance is very much in doubt. It suggests that other explanatory routes could be at work, but which are yet to be fully examined.

These beaten paths in the sociological literature are more visited and revisited for good reasons. Environmental movement strategies provide a robust explanation for state environmental interventions in advanced industrial nations since the 1960s. In a similar fashion, the world society theory has also been a robust analytical framework for much of the late twentieth century, especially for the postwar era. In other words, these dominant explanations rose to prominence because of their theoretical robustness in particular geographies and temporalities. The combination of national contexts and historical circumstances is crucially important for these causal connections to materialize. The new global balance of power (Roberts, 2011), however, calls for additional causal pathways to fully understand the empirical realities at hand.

Notes on Methodology: Off the Beaten Paths

This dissertation seeks to explore state environmental intervention as a bureaucratic process. As such, it builds on several bodies of scholarly literature, but also seeks to explore new theoretical terrains. To maximize the theory-building capacity of empirical evidence, I collect data through two qualitative sources – archival research and ethnographic fieldwork.

Archival Research

During archival research, I delved into the collection of published articles by Chinese scholar-officials since 1949, when the People's Republic of China was founded. I utilized the electronic collection from China National Knowledge Infrastructure (CNKI). The collection for the first few decades (1949 – 1977), however, is incomplete. Records for some

years, in fact, have disappeared altogether as a result of the Cultural Revolution (1966 – 1977). A detailed look at earlier historical periods provides the main empirical material for Chapter 2.

A summary analysis of the archival material, which is presented in Chapter 3, uses complete year-by-year data, which is available from 1979 to the present day. The summary analysis includes all articles that has the phrase, *zhibiao tixi*, or matrices of indicators, in its abstract. Among these, articles that have *huanjing* (environmental/environment) or *kechixu* (sustainable/sustainability) are considered to be environmentally-related. The year-by-year percentages of these articles are reported and closely examined in Chapter 3.

I use evidence from published records to approximate the Chinese state discourse on governmentality in general, and that on environmental governance in particular. The extent to which this approximation is satisfactory is, of course, debatable. The predominant majority of these articles are explicitly policy-relevant. Many are results from projects commissioned by government agencies, or penned by policy advisors in government research institutes. In the absence of alternative data, this record provides a close empirical approximation for policy discourses in China.

Ethnographic Fieldwork

In addition to archival work, I conducted ethnographic fieldwork in the Chinese Ministry of Housing and Urban-Rural Development (MoHURD) from December of 2013 to December of 2014, in addition to three months of pre-dissertation fieldwork in the summer of 2011. MoHURD is one of the 25 ministerial-level agencies of the Chinese central government. MoHURD, the Ministry of Environmental Protection (MEP), and the National Development and

Reform Commission (NDRC) are the three main agencies that make national environmental policies in China (Zhou, He & Williams, 2012). While there is some overlap of jurisdictions across the three agencies, they also have different priorities; MoHURD is chiefly responsible for urban environmental policies, MEP for pollution mitigation, and NDRC for energy policies (Khanna, Fridley, & Hong, 2014). As I hope to maximize understanding of the widest range of environmental policies in China, MoHURD is the most ideal agency for the current dissertation.

During the summer of 2011, I worked as a research fellow at the Institute for Building Efficiency at Johnson Controls Inc., a Milwaukee-based corporation. I spent most of the time at the company's China offices in Shanghai and Beijing. I was able to gain access to interviews with MoHURD officials, thanks to the company's extensive local contact networks. On August 2, 2011, a member of Johnson Controls' leadership flew in to China to meet with a high-ranking government official at the MoHURD compound, and asked me to accompany as translator. I shall refer to this official as Mr. Hao. After the meeting, Mr. Hao and I had a brief conversation, in which he asked about my studies and future plans. After our conversation, he instructed his secretary, Ms. Mei, to share with me his personal cell number, and generously offered to help with my research should the occasion arises. Two years later, on June 26, 2013, after securing funding for my dissertation fieldwork, I reached out to Ms. Mei about the possibility of conducting a long-term research project at the agency. Within a few hours, Ms. Mei informed me that Mr. Hao had not only approved my request to observe the work of the agency for a full year, but also granted unrestricted access to meetings and documents. I conducted ethnographic fieldwork from December 26, 2013 to December 13, 2014. Furthermore, I returned to the field for a week in June 2015 to retrieve audio recordings of meetings that I was unable to attend in person.

As a participant observer, I worked closely with officials responsible for national environmental policy-making in China. During my fieldwork, I attended negotiations and meetings between Ministry officials and various transnational agencies such as the World Bank, or foreign embassies in Beijing. I was granted permission to record all the meetings I was allowed to attend for the purpose of this research. All direct quotes in this dissertation are from these recordings, which have been transcribed by a research assistant. When audio recording was not possible, or when recording could appear socially awkward, I took detailed field notes shortly after the occasion, such as shared cab rides, working lunches, and cocktail parties. I joined official trips to various cities across China, and often stayed longer to have in-depth interviews with officials at local levels. On other occasions, after a local official visits the Ministry in Beijing, I requested to join the official on the journey back, so as to gather further information through interviews and observations. Whenever possible, I also attended meetings, dinners, and trips with local officials during my local stays. In addition, I obtained access to both internal and public documents at the Ministry and from local governments, which constitute a major source of evidence to further substantiate my ethnographic findings. Whenever in demand, I provided free translation services to officials, which often led me into rooms that were otherwise closed to outsiders. Being an occasional translator has the additional benefit of note-taking without appearing intrusive. I also helped to draft and proofread official emails and letters in English, whenever being asked to.

Overview of Chapters

The dissertation has five chapters. The second to the fourth chapters are main empirical analyses of various aspects of environmental governance in China – historical, national, and transnational.

Each of the chapters interrogates one aspect of the bureaucratic process. Taken together, the chapters reconstruct the complexities of bureaucratic decision-making in China's environmental governance. When faced with a combination of historical baggage, national policy routines, and transnational governance demands, the Chinese environmental decision-maker has to navigate through the multiple sources of information with the tools they have. The empirical chapters are briefly summarized below.

The second chapter is about a tradition of governance – how it emerged and evolved. I provide a focused treatment of one aspect of the state-building process in modern China – organization of the socialist command-and-control government on the basis of quantitative indicators. This, I argue, is perhaps the most characteristic feature of the kind of "socialism with Chinese characteristics." In this historical exercise, I first examine how the economic and philosophical debates among intellectuals were increasingly politicized during the decade that led up to the Cultural Revolution in 1966. I then demonstrate how one side of the pre-Cultural Revolution debate, which favored heavy-handed state planning above everything else, was re-energized after the end of the Cultural Revolution in 1977. The re-energization of state planning gained substantial momentum through a quantitative turn in its orientation circa 1979. Over the last four decades, quantitative governance has been normalized as a routine feature of the Chinese communist party-state. Centralized planning finds its new expression through the extensive use of quantitative planning in policy-making.

Chapter three builds on the previous, and seeks to articulate the contemporary implications of China's approach to environmental issues. Environmental authoritarianism is on the rise, but social science discussions of the matter remain largely speculative. This chapter

contributes a down-to-earth understanding of environmental authoritarianism by supplying rich ethnographic evidence about the day-to-day processes of environmental policy-making at central and local levels of the Chinese state. I present evidence about not only how environmental policies move through different levels of the Chinese party-state, but also how different policy options are reframed, curtailed, or aborted before they see the light of the day. By attending to both policy outcomes and non-outcomes, this chapter provides an understanding of how the Chinese state systematically redefines the meaning of environmentalism in the policy framework. Through extensive use of quantitative indicators and other instruments of "scientific development," the Chinese state precludes deliberation and participation, while also engenders a particular kind of environmentalism that is far removed from the biophysical landscapes and ecological processes it purports to govern. Authoritarian power, in this sense, remakes nature in its own image.

Chapter four introduces an additional layer in the bureaucratic process. In the social science literature, the global rise of state activities in the environmental realm is celebrated as a prototypical example of a "world society," where universal values are said to be driving the convergence of cultural and socio-political experiences on a global scale. This chapter takes issue with this dominant view in the literature. I recognize that notions ranging from the more established "sustainable development" to the more fashionable "resilient cities" have entered into the standard lexicon of international development *en masse*. At the same time, however, the global spread of environmental values has not resulted in the convergence of environmental practices, policies, or programs across nation-states. In other words, the growing salience of a global environmental rhetoric has not resulted in concerted global environmental actions on the ground. This disconnect between diplomatic formality and policy substance reflects a major

challenge for environmental ethics – the cognitive distance between global trends and local actions.

Chapter 2. Socialism with Chinese Characteristics: The Making and Re-making of a Tradition

> *[D]uring much of Chinese history new ideas, to be acceptable, had to be proved compatible with tradition; in more recent times tradition, to be retainable, has had to seem compatible with new, independently persuasive ideas. Chinese values have continued to be prized, but by minds that seem more 'traditionalistic' than traditional – modern minds with nostalgia for the past, not minds with the past's authentic intellectual colour.*
>
> *Joseph R. Levenson (1968, p. xxi)*

After the founding of the People's Republic in 1949, the Communist Party came to power with a complex set of political, ideological, and institutional baggage. Politically, party and military elites who played crucial roles during the communist revolution had some experience running quasi-states in former base areas of the communist regime (e.g. *Jingangshan*), though they were evidently more experienced in warfare and espionage than in government (Teiwes 1979). When these party cadres and war generals were dispatched to provinces and municipalities across the nation to govern, they found themselves in a position of having to tackle a host of new challenges for which they lacked experience. Further complicating the matter, most of these newly appointed governors had involved themselves in revolutionary struggles only in rural parts of the country, thanks to Mao's "villages besieging cities" *(nongcun baowei chengshi*) strategy of revolution (Perry 1993). This largely militaristic, revolutionary, and rural background of party

officials was in stark contrast with the desire for a growing, but stable, urban economy in the new nation. As a result, intellectuals played a major role in the day-to-day operations of the state during its early years, in that they supplied (and debated among themselves) various proposals, blueprints, and strategies to enable the work of the government.

Ideologically, the Leninist organization of the Chinese Community Party had been crucial in shaping its revolutionary success. In fact, the Marxism-Leninism theory of state-building provided a common strategy, a shared language, and a unified ideological edge that brought together the Chinese and the Russian revolutions (Skocpol 1979). In the post-revolution years, however, while China attempted to follow the Soviet model of economic development and state organization initially, the difference between Stalin's and Mao's approaches to state power loomed large. Just as Moscow cast serious doubt on the ability of Chinese communists to govern a country of such scale, Beijing grew increasingly wary of Soviet tutelage (Westad 1998). If the revolutionary success of Chinese communists had been aptly framed as part of the international socialist movement headed by the Soviets, the post-revolutionary development of China gradually departed from the Soviet style, and ultimately mounted to an open conflict with the latter. In this context, the Chinese state had to wrestle with the omnipresence of Soviet-style institutions and ideologies in China, not to mention the army of Soviet-trained officials, scholars, and engineers, all of whom were incumbents of major positions in their respective fields.

Institutionally, years of warfare (first the anti-Japanese war, and then the civil war) had undoubtedly crippled the economy, disrupted the social order, and thrown national politics into chaos. This does not mean, however, that the communist government, after the 1949 takeover, had to start from scratch (Naughton 2007). In fact, during the decades before its retreat

to Taiwan, the Guomindang (Kuomintang) government had established an expansive state apparatus, especially in major urban areas of the nation. The legacy of such institutions, whether those that successfully nationalized industrial production, or others that implemented economic and urban planning across the nation, provided the new communist rulers with readily available solutions to governmental challenges (Esherick 2002). This, of course, is not to imply that the Communist Party inherited the Guomindang state institutions in its entirety. Quite on the contrary, major decisions had to be made to distinguish "revolutionary" (*gemin*, or loyal) from "counter-revolutionary" (*fandong*, or traitorous) elements of the legacy institutions (Pepper 1999). The communists' selective rework of the state therefore figured prominently on the political agenda of the party-state in its infancy. In this sense, the institutional maturation of a post-1949 Chinese party-state had to achieve the dual ends of national independence and party distinctiveness.

Taken together, the interplay of this complex set of political, ideological, and institutional baggage provides the historical backdrop to the birth of the Chinese communist party-state. In the words of the Stanford sociologist Andrew Walder, it was "the birth and maturation of a distinctive kind of party-state, a new type of state-led industrialization, and a novel set of political relationships" (Walder 1986: 1). It was, above all, the making of a tradition. As with all traditions, it is necessarily multifaceted in its composition and fluid in its evolution. It has to be, in other words, invented and reinvented, incarnated and reincarnated, not by some abstract currents of historical forces, or romanticized legendary figures, but by a series of decisions people made at each fork in the road. While names and faces may fade over time, we continue to feel and live in their legacies. In this chapter, I seek to bring to the fore different

names and faces, in an attempt to fully appreciate how they negotiated with, and navigated through, the political, ideological, and institutional baggage of their time.

This chapter is about a tradition of governance – how it emerged and evolved. In the pages to follow, I provide a focused treatment of one aspect of the state-building process in modern China – organization of the socialist command-and-control government on the basis of quantitative indicators. This, as I argue below, is perhaps the most characteristic feature of the kind of "socialism with Chinese characteristics." The first part of this chapter examines how the economic and philosophical debates among intellectuals were increasingly politicized during the decade that led up to the Cultural Revolution in 1966. In the second part, I demonstrate how one side of the pre-Cultural Revolution debate, which favored heavy-handed state planning above everything else, was re-energized after the end of the Cultural Revolution in 1977. The re-energization of state planning gained substantial momentum through a quantitative turn in its orientation circa 1979. The third and final part examines the rapid rise of quantitative government, and its normalization in Chinese politics over the last four decades.

Debating State Planning in Pre-Cultural-Revolution Years

> Theoretical research is an integral part of our nation's economic activities during the transition period. The socialist economy shall be developed under the scientific guidance of Marxism-Leninism theories. At the same time, through creative labor, we continue to discover endless wisdom and practical experience, which, through integrated research, help to enrich and enhance scientific theories to guide all sectors (Editorial Committee, 1955: 1).

So it proclaims in the editors' opening statement on the first page of the inaugural issue of *Jingji Yanjiu*, or *Economic Research*, published in April, 1955. This two-pronged statement, as we shall see, prophetically characterized the state of intellectual debates that would define its pages throughout the decade to follow. (The journal was temporarily suspended in June, 1966, at the dawn of the Cultural Revolution.) On the one hand, scholars were driven by the imperative to contribute to the political economic framework from Marx, Engels and Lenin. It remained an unshaken belief for Chinese officials and intellectuals of all stripes that the Marxian framework represents a path towards ultimate truth. On the other hand, the interpretation of the Marxian framework was subject to such "creative labor" that defies definition. While the consensus on the socialist planned economy was firm, much less certain was the question of how to achieve it. When it came to the nitty-gritty of running a state, even the combined canons of Marx, Engels, Lenin, Stalin, and Mao proved insufficient. As the editors of *Jingji Yanjiu* clearly envisioned, "endless wisdom" was yet to be discovered.

Jingji Yanjiu was no ordinary journal. In the few years before the inauguration of this journal, the debate had already started among intellectuals in China about the "correct" way of operating the socialist planned economy. In these early years, however, the scale, intensity, and political ramifications of the debate was moderate, if anything. The founding of the new journal created a major outlet for intellectuals who sought answers to a wide variety of eminent questions, which ranged from the most practical (e.g. merit pay) to the most philosophical (e.g. nature of exchange).

Comprehensive reviews of these debates are available both in English (Lin, 1981) and in Mandarin (Xiang, 1988). Both reviews summarize the decade of intellectual exchange as

the triumph of the Law of Value (the Marxian economic theory of labor, commodity, and exchange) over the Law of Balanced Development (Stalin's theory of national development dictated by proportionate planning through a command-and-control system[2]). The two reviews share this evaluation, largely because both authors are narrowly concerned with the history of economics as an academic discipline in China. In both reviews, the authors pay scant attention to interventions into these debates from non-economists, such as textile workers, military officials, and local commune members. The fact that these non-economists played a role at all in an otherwise esoteric economic debate is, in and of itself, a curious matter worthy of investigation.

In fact, this debate had far-reaching consequences beyond the field of economics. Although it started as a scholarly discussion of Marxian economic theories (Sun 1956), it quickly escalated to the realm of ideology – a popular topic in the incipient nation (Gui 1965). The initial focus on staying true to Marx's writings gave way to a desire to display loyalty to Mao. The initial intent of seeking operational guidance from Marx grew into dogmatic rejection of anything that remotely resembles capitalism. The initial circle of reputable academics in this debate also expanded (somewhat dramatically) to include people from all walks of life, including, for example, a ping pong player (Zhuang 1966) and a watermelon wholesaler (Zhou 1965). While Lin (1981) and Xiang (1988) are both correct in concluding that the Law of Balanced Development lost its foothold among economists, precisely the opposite holds true for the Chinese society as a whole. It was, in fact, the ascendance of an ultra-leftist wing in Chinese society and politics.

On the economic side of the debate, Lin (1981) and Xiang (1988) disagreed on how many "schools" there were among economists – a disagreement that testifies to the diversity

of economic perspectives at the time. Economists debated on (a) the relative importance of exchange value in shaping national economic plans, (b) the desirable speed of growth during the transition period, (c) the acceptable level of differentiation of economic principles in different sectors, (d) the appropriate level of autonomy each firm should be allowed to enjoy, among others (see also Xue 1996). There was a full spectrum of opinions for each single question under discussion, making it a challenge to draw boundaries, even arbitrary ones. As one economist put it,

> We have rather different views on issues such as commodity exchange and the Law of Value for several reasons. First, people have different interpretations of the classic works of Marx and Engels. We quote their writings, but also attach our somewhat imprudent interpretations. Second, the current socialist organization is under a highly complex transition period. We have different understandings about empirical observations and their relationships to the underlying nature of socialism. Third, there exists insufficient empirical research about the current economic state of affairs, which results in wildly different estimations (Luo 1959: 61-62).

In the realm of economics, it was indeed a period of exceptional intellectual vitality. The newborn nation offered unprecedented possibilities for economists to collect and refine empirical observations of a rapidly changing society, to localize economic theories in the Marxian tradition, and to influence major policy decisions of the state. It was the best of times – the age of wisdom, and the spring of hope. It was also the worst.

On the non-economic side of the debate, a side that neither Lin (1981) nor Xiang (1988) attended to, much buzz was starting to circulate. These interventions in the debate did little to engage the economic literature per se. On the contrary, these voices sought to "un-debate" the diverse set of ongoing discussions by declaring the entire undertaking "bourgeois," and hence anti-socialist, traitorous, or "counter-revolutionary" in nature. In response, an outspoken economist, Sun Yefang, openly lamented in his 1959 article, *On Value*, that

> Those of us in economics are starting to feel sick. … We need to dis-involve ourselves from those squabbles that fail to engage any substance. In other words, [we need to] distance ourselves from empty arguments that do little more than playing with words. … This chaos has led the general public to believe that any notions of value, or Law of Value, are synonymous with the much-disdained processes [of surplus value creation] dictated by forces of capitalism. Economists have the obligation to set the record straight (Sun 1959: 48).

Much to his chagrin, Sun was soon to be drawn to the center of such "empty arguments." In 1963, Sun's protégé, Yang Jianbai published an article titled *The Balance of National Economy and the Question of Producer Price* in *Jingji Yanjiu*. In this article, building on Sun's theoretical premise, Yang established that the relationship between labor time and economic valuation of commodities (a.k.a. the Law of Value) continues to be a basic economic regularity under socialism. Yang further contended that a socialist national plan was only conceivable after paying due respect to the Law of Value in the planning framework (Yang 1963). A few months later, two colleagues of Yang's, He Jianzhang and Zhang Zhuoyuan (who published under the penname Zhang Ling) further developed this thesis to articulate how the

application of the Law of Value needed to fully account for different economic conditions in each sector of the economy (He & Zhang 1964). This series of articles outlined a general economic framework for socialist planning based on empirical observations of production capacity, firm productivity, labor supply, commodity valuation, capital availability, and their interactions with sectoral conditions. Though the framework was far from a consensus among economists in China at the time, such was precisely what it aimed to become – a basic blueprint for further deliberation and refinement.

Indeed, these articles became a major topic of debate, but not in a spirit Sun and associates had hoped for. In August of 1964, Communist China's main propaganda outlet, *Red Flag Magazine* hosted a "workshop" (*zuotanhui*) on economic theory, which drew a crowd of nearly a hundred people. The moderator of this workshop declared at the onset that the purpose of the workshop was to "solemnly critique the series of recent articles that advocate for revisionist heresies," as Sun's biographer recalls more than three decades later (Deng 1998: 234). This workshop opened the floodgate of attacks on Sun and associates.

The conservatives' attacks on Sun were initially predicated on a concern for growing inequality in the nascent socialist economy. The egalitarian ideal of a "post-capitalist society" (He G., Xue, & Peng 1964) loomed so large for most scholar-officials that they would cast doubt on any notion that, even in the slightest fashion, hints otherwise. Sun's advocacy for a value-based economic theory was considered a major challenge to the deep-seated egalitarian ideal among conservatives. Sun's theory began with the assertion that the relationship between labor inputs and revenue gains varies by sector. In other words, the fact that each sector has a different rate of revenue was taken for granted in the framework of Sun's. This did not jibe well

with the conservative imagination for "post-capitalist" China. In a socialist economy, it was envisioned by conservatives that the state would take charge in setting production goals and market exchange prices, which will be "guaranteed" to be based on the needs of the population. This ultra-left economic ideal further stipulated that rational planning by the state was the first-order business under socialism. The notion of value, if it mattered at all, was merely numerical rendering of state planning and coordination, which was of decidedly secondary importance (Bai 1964). Others argue that notions of value, profit, and revenue must be excluded from the socialist economic lexicon altogether (Dai, 1964).

A heretic was made of Sun.

Following the *Red Flag Magazine* "workshop," similar events were held across the nation, at schools, factories, and other forms of work units. Curiously, as the critique of Sun gained national prominence, the economic core of his arguments disappeared from view. It escalated to the level of ideology, of spirit (*jingshen*), and of intent (*lundiao*). In particular, a national movement was formed to denounce the "counter-revolutionary" ideology, the "polluted spirit," and the "malicious intent" in the works of Sun Yefang, Yang Jianbai, He Jianzhang, and their associates.

In one of such "workshops" in Wuhan, for example, it was said that "Yang's theory of revenue appears to serve socialism, but in fact paves the way for the resurgence of capitalism. … Yang Jianbai and some of the others are politically blind, and their understanding of revenues cannot possibly be correct" (Zhang et al., 1965: 32). Another participant accused Sun of "chasing money and forgetting supreme ideals of the proletariat" (*ibid*: 31). Furthermore, an issue that was repeatedly brought up was Stalin's Law of Balanced Development, with which

Sun's theory had an allegedly fatal clash. "The socialist economy coordinates production and distribution in an orderly fashion, based on (1) the objective demands of the society, (2) the political economic priorities set by the state, and (3) state centralized planning," declared one participant, who allegedly paraphrased Stalin (*ibid*: 37). The minutes of this "workshop" was published under the title "*Two Fundamentally Antagonistic Theories of Revenue*." (*ibid*, 1965).

It was not so much antagonism, in fact, as it was dogmatism. There was an appearance of numerous journal articles, newspaper op-ed pieces, and "theory workshops" across the nation targeting Sun and associates in the months after the *Red Flag Magazine* episode. Underneath the clamor, however, there was a strikingly narrow and monotonous interpretation of socialism. Stalin's Law of Balanced Development, translated awkwardly into "Law of Planned and Proportionate Development" (*Youjihua Anbili Fazhan Guilv*), was acclaimed to be the "science of socialism" (Gui, 1965). Widely circulating was complete confidence in state planning, as well as a deep conviction that national plans, once introduced, would be effortlessly fulfilled in an "orderly and proportionate" manner (Hua, 1965). Sun's focus on values and revenues was regarded as a "bourgeois" challenge to such socialist orthodoxy (Yan & Hu, 1965). Throughout the years, the dogmatic fervor sustained the repetition and nation-wide dissemination of these lines of attacks, in the name of a socialist defense against capitalist resurgence.

Before long, the dogmatic defense of socialism amounted to a total rejection of intellectuals *en masse*. The anti-intellectual tendency was a natural outgrowth of dogmatism, in retrospect. The spread of anti-Sun sentiments penetrated so pervasively into the Chinese society that the average citizen was called upon to open fire at renowned economists and other

intellectuals of all stripes. The dogmatic defense of socialism was framed in such simplistic black-and-white terms that it spread like a wildfire, even in a nation where a significant share of the population was still illiterate at the time (Lavely et al. 1990).

The rapid growth of anti-intellectualism was perhaps best exemplified in an article, titled *Philosophical Questions of Selling Watermelons in the Big City* (Zhou, 1965). The article was first published in the journal *Academic Monthly* in December of 1965, but was reprinted the next year in the *People's Liberation Army (PLA) Paper*, the *Guangming Daily*, and the now familiar *Jingji Yanjiu*. The author of this article, Zhou Xinli, was a watermelon wholesaler in Shanghai. This article gained such prominence in the national propaganda spectacle at the time, that it was utilized as a case in point for the ascendance of "proletarian knowledge." There was pervasive populist fervor that proletarian knowledge renders "academic authority" irrelevant in the socialist nation. If the pragmatic "philosophy" gained through selling watermelons warranted national appreciation, then perhaps intellectuals were indeed "wrongfully monopolizing the academic world to resurge capitalism" (Zhou, 1966).

Perhaps not by accident, the reprint of the watermelon philosophy article appeared in the last issue of *Jingji Yanjiu* before its suspension at the onset of the Cultural Revolution. Thus began a decade of total intellectual darkness.

Asserting "Proportionate Development" in Post-Cultural-Revolution Years

Much of what happened during the cataclysmic decade of the Cultural Revolution has been documented extensively in the existing literature (Clark 2008; Esherick, Pickowicz, & Walder 2006, MacFarquhar & Schoenhals 2009; Schoenhals 2015; Walder 2015). While the numerous

upheavals between 1966 and 1976 could offer insights into the Chinese state and society, I focus instead on the years immediately following the Cultural Revolution. These post-Revolution years are pivotal for understanding continuity and change in the Chinese party-state, especially in light of what practices were officially "condemned" (*boluan*) and what "vindicated" (*fanzheng*), which had lasting impacts on Chinese politics through this day. It was a fork-in-the-road moment in the making of the Chinese party-state tradition. Just as the start of the Cultural Revolution declared the triumph of anti-intellectualism and a dogmatic interpretation of Stalin's Law of Balanced Development, the beginning of a post-Revolution era could signal another major shift in the People's Republic. As we shall see, while the Law of Value was to receive its due share of credit, the Law of Balanced Development proved just as long-lived, if not more.

In the realm of economics, both as an academic discipline and as an area of public policy, the end of the Cultural Revolution marked the "vindication" of Sun Yefang and his advocacy for the Law of Value. In a speech delivered at the State Council on July 28, 1978, Hu Qiaomu, then-president of the Chinese Academy of Social Sciences (CASS), established that the socialist economy was only conceivable when based on understandings of its "objective regularities" (*keguan guilv*), which was an intentionally vague code word for the Law of Value (Lu, 2009). The Hu speech was made official when it was reprinted in the *People's Daily,* the main public-facing print media of the Communist Party, on October 6 of the same year (Lin 1981).

Meanwhile, the restoration of the Law of Balanced Development was steadily underway, despite lack of official endorsement. The making of national targets, and the "proportionate" enforcement of said targets down the chain of command, continued to figure

prominently in the minds of Chinese bureaucrats and scholar-officials alike. For example, an otherwise obscure book chapter in English, titled *Establishing Manufacturing Objectives*, authored in 1970 by a New York-based publisher (Bittel 1970), was translated into Chinese and published in *Foreign Economic Reference Materials* (*Waiguo Jingji Cankao Ziliao*) in 1979, along with a note from the translator that opened with the following.

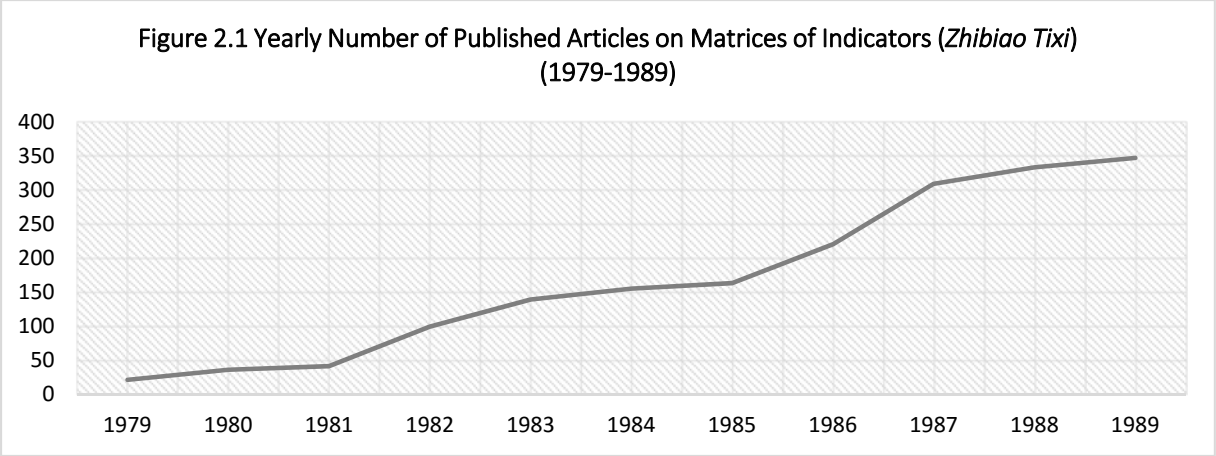
> To enhance management and to ensure the completion of designated tasks, an enterprise must fulfill targets set by the state. In addition, [the enterprise] must develop a matrix of indicators on its own, so as to allocate [responsibilities] in a specific, explicit, and detailed manner, and to conduct rigorous evaluations accordingly. (Lu 1979: 21)

This process of "allocating" (*fenpei*) responsibilities, and "evaluating" (*kaohe*) performances, as we shall see, turned out to be a reverberating theme for the entire era and beyond. Relatedly, the notion of a "matrix of indicators" (*zhibiao tixi*)[3], which emerged circa 1979, quickly rose to prominence in Chinese politics.

The reincarnation of the Law of Balanced Development in the form of quantitative indicators was a peculiar development. Before the Cultural Revolution, advocates of Stalin's Law relied on highly abstract philosophical arguments in favor of state planning. They sometimes invoked selective quotes from Marxian texts, and produced extended interpretations of their own color. Sun Yefang and associates, on the contrary, offered sophisticated mathematical proofs in their rebuttals, both before and after the Cultural Revolution. The conservatives had a conspicuous lack of numbers, equations, or formulas in their toolkit. The 1979 turn to quantitative indicators was therefore a major attempt to introduce "science" into the

conservative polemic (Shao 1979; Guan 1980). Indicators, in this sense, served as a major instrument for the previously anti-intellectual crowd to look just like the intellectuals whom they so denounced. In other words, the Law of Balanced Development found renewed political momentum in indicators.

In fact, within a few years, it was said that the "planned economy indicator system" already constituted a robust field of study in its own right (Pang & Xie, 1982; Zhou 1982). It did indeed. For example, a set of indicators was developed for evaluating "economic effects of agricultural techniques", which included, among others, annual yield per unit of agricultural field, annual yield per hour of labor input, ratio of non-agricultural population to agricultural population, and average cost of production per 100 yuan of production value (Wei 1979). In a similar fashion, scholar-officials developed indicators to place all libraries in the nation under statistical scrutiny. Indicators included percentage of collection in active use, average circulation rate, and percentage of requests fulfilled, among others (J Li & Ma 1982). It was further suggested that libraries across the nation should use these indicators to "start a socialist productivity competition, … thereby creating a vibrant environment for libraries to compete with, learn from, emulate, help, and outperform each other" (Zhuang, 1982: 5). Similar undertakings were made for the transportation and logistics sector (He 1983), urban environmental quality (Y Wang 1983), and higher education (J Wang 1983), to name a few.

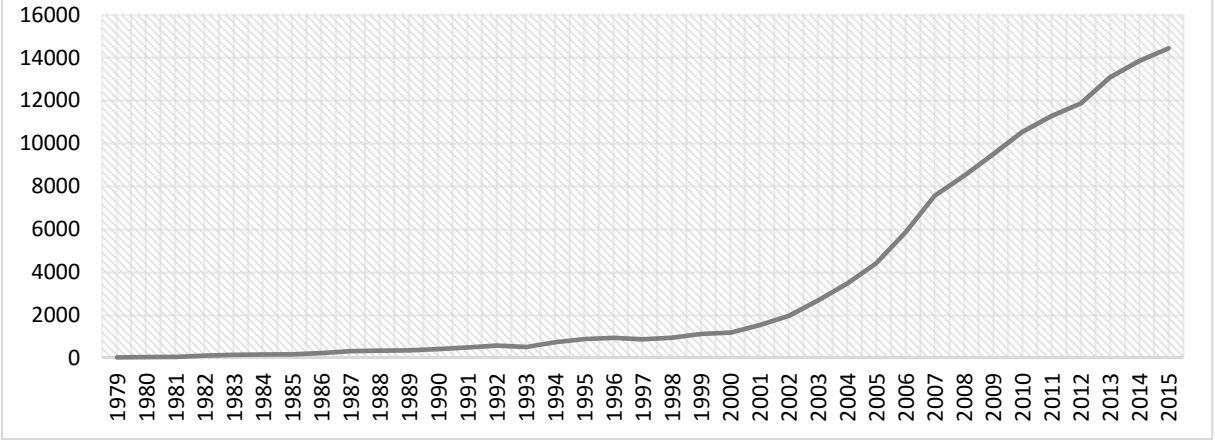


In the decade after the Cultural Revolution (1979-1989), the number of published articles on matrices of indicators grew by an average annual rate of 32.38 percent, skyrocketing from a count of 21 in 1979 to a total of 347 in 1989 (Figure 2.1). A tradition of quantitative government was born.

Institutionalizing "Proportionate Development" in Recent Decades

The post-Cultural-Revolution boom in governmental use of quantitative indicators marked the beginning of a tradition that would take deep root in the Chinese party-state. If the ascendance of quantitative indicators from 1979 to 1989 (Figure 2.1) was rapid, it would soon become outright unstoppable.

Figure 2.2 Yearly Number of Published Articles on Matrices of Indicators (*Zhibiao Tixi*) (1979-2015)



Quantitative indicators play an increasingly prominent role in shaping policy-making in China over the last few decades, as shown in Figure 2.2. The growth in the number of indicator-based articles on public policies has been exponential. The 1990s saw a total number of 7,406 articles on indicators, a fourfold increase from the previous decade's figure of 1,842. In the 2000s, Chinese scholars produced a total of 46,610 articles on quantitative indicators, or more than six times the 1990s' figure. In the most recent five years from 2011 to 2015, Chinese journals have already published more articles on quantitative indicators (64,580) than what previously took ten years to put into print (55,970 from 2001 to 2010). Barring a couple of small year-by-year fluctuations, the last few decades witnessed the steady ascent of quantitative indicators in Chinese politics. From "National Civilized City Index" at the central level, to "Ecological Civilization Index" at the Guizhou provincial level, and to "Tianjin Eco-City KPI System" at the city level, examples abound. While some of these examples are better publicized, the predominant majority of them remain hidden from public scrutiny behind the guarded doors of government agencies and affiliated research institutes.

One recent example is especially telling. In the summer of 2012, a research finding went viral on social media in China. By the end of 2010, the "great mission of rejuvenating the Chinese nation" was said to have been 62.74 percent accomplished, a significant improvement from 46.44 percent in 2005, according to readings on the "rejuvenation index" developed by Yang Yiyong and his team. Mr. Yang is a scholar at the Academy of Macroeconomic Research of the National Development and Reform Commission (NDRC), the nation's most powerful state planning agency.

The result was initially published in the *Journal of the Central Party School* in June of 2012 (Yang & Tan, 2012) – a publication that is understandably inconspicuous. Two months later, on August 3, the finding was presented at a high-profile research colloquium on "Modernization in China" held by the Chinese Academy of Sciences (see CAS, 2013 for proceedings of the conference). The colloquium was well attended by multiple national media outlets, which immediately recognized the news worthiness of the finding. Viral it went.

Netizens derided the apparent absurdity of the claim, contradicted it with personal experiences of economic stagnation, chided the aloofness of bureaucratized research institutes, and dismissed it as hollow propaganda. On August 7, in response to widespread public disdain, Mr. Yang Yiyong said in an interview with *Southern Weekly*, a liberal-leaning news outlet, that his index "is a strictly scientific measure, and can be applied to any country in the world, such as the four other BRICS nations." He also defended his index as a "measure of the aggregate that is bound to differ from individual experiences" (Zhao, 2012: A06). Elsewhere, Mr. Yang further articulated his conviction in the importance of quantitative indicators:

> According to social engineering theories, a successful social project must be describable, designable, and measurable. … Therefore, major social engineering initiatives of the Party, so long as they aspire to be scientific, must be accompanied by systems of performance indicators (Yang, 2015: 20-21).

Mr. Yang is not alone; his evangelical support for quantitative indicators has had numerous historical precedents. So much so that one starts to wonder whether his notion of "social engineering theories" is an implicit reference to Stalin's Law of Balanced Development. Science, or the appearance of scientific objectivity, was the justification then, and the justification now. Throughout the decades, this tradition of quantitative government has established itself as a primary policy instrument for "socialism with Chinese characteristics." The habitual use of quantitative indicators by Chinese bureaucrats is etched onto the institutional identity of the party-state, to a point where inventions such as the "rejuvenation index" no longer seem out of place to those that have grown used to the tradition.

Conclusion: Navigating Bureaucracies with Numbers

Numbers underpinned the Chinese planned economy of the 1970s, 80s, and even early 90s. As much of the Chinese economy steers away from centralized state planning, the use of quantitative indicators has not waned. On the contrary, numeric representations have grown out of their limited uses in economic target-setting to become a widely adopted approach to assist the exercise of centralized state power in other areas. Indicators constitute a standard practice in contemporary Chinese statecraft.

Quantification in public life is by no means unique to the Chinese context. The use of numerical procedures, statistical instruments, and mathematical techniques has been widely documented as a defining feature of the modern state. Whether in the eighteenth century fiscal-military state of England (Ogborn, 1998), the mid-nineteenth century British colonial government in India (Agrawal, 2005), the early twentieth century United States Army Corp of Engineers (Porter, 1996), or late twentieth century rural development in Tanzania (Scott, 1998), numbers are happily married to the exercise of state power. In fact, the elevation of numbers to the status of objectivity, science, authority, and universality is perhaps the most marvelous achievement of modernity (Espeland & Stevens, 1998; Goldman, 2005; Power, 1997; Rottenburg et al., 2015).

Yet the ascendance of numbers in the Chinese party-state was a development under rather unique historical circumstances. As we have seen, the desire to establish a distinctive "brand" of socialism, the love/hate relationship with Stalinist ideology, and the populist movements before and during the Cultural Revolution all contributed to the historical conditions that gave rise to quantitative indicators after the Cultural Revolution. Since then, the use of indicators has grown into an increasingly professionalized, bureaucratized, and routinized aspect of the Chinese party-state behind closed doors. Numbers become paramount. Policies are justified by them, communicated through them, debated around them, implemented according to them, and evaluated against them.

In this sense, the pervasive use of quantitative indicators in the Chinese bureaucracy is not so much a traditional practice, as it is a *traditionalistic* commitment. No longer does one invoke Stalin's Law of Balanced Development to justify the use of numbers, as

scholar-officials did throughout the 70s and 80s. Numeric representations have successfully acquired independent *sui generis* qualities that render them automatically superior to alternative tools of government. Moreover, the process through which indicators are devised, data collected, readings calculated, and reports framed are black-boxed altogether. Indicators are presented as a default option for the "iron cage" of bureaucracy.

Furthermore, the party-state's use of quantitative indicators has implications beyond a perception of objectivity. It has long been recognized that the Chinese party-state system is complicated by the presence of both a vertical (from center to local) and a horizontal (within a given geographical area, e.g. province or city) chain of command (Lieberthal, 1995). When quantitative indicators are presented in the process of policy-making, they become a common language through which vertical and horizontal commands are harmonized into the same indistinguishable expression. In this sense, the appeal of indicators lies in the fact that they allow bureaucratic work to be accomplished, even when different factions remain in conflict (Zweig, 2002). In essence, indicators provide a shortcut to navigate through the labyrinth of the Chinese party-state. While they do not necessarily settle disputes once and for all, they nevertheless enable bureaucrats to rise above these disputes to get the bureaucracy to work.

As a generic tool of government, indicators have been applied to a wide range of public affairs. In more recent decades, however, indicators increasingly cluster in the area of environmental policy-making. This concentrated use of quantitative instruments in environmental affairs has major consequences for China's environmental governance, which I turn to in the next chapter.

Chapter 3. Bureaucratizing Nature in the People's Republic of China

> *The world is not a solid continent of facts sprinkled by a few lakes of uncertainties, but a vast ocean of uncertainties speckled by a few islands of calibrated and stabilized forms.*
>
> *Bruno Latour (2005: 245)*

It has long been recognized that the authoritarian structure of the Chinese party-state is remarkably resilient in the face of various kinds of new challenges (Nathan, 2003). Thus, it does not come as a surprise when a recent collection of articles on climate politics in China opens with the declaration that "China has focused on command-and-control measures as its primary policy instrument so far. These measures make use of administrative capacity to implement climate policies" (Belis & Qi, 2015: 201).

The implications of China's command-and-control approach to environmentalism, however, are yet to be fully fleshed out. An emerging literature begins to interrogate, on the one hand, the meaning of environmental protection under authoritarian rule, and on the other, the implications of increasing environmental challenges for authoritarian durability (Beeson, 2010; Gilley, 2012; Wurster, 2013; Shahar, 2015).

Partly because of the relative opacity of the Chinese party-state, these existing accounts of authoritarian environmentalism in China remain "necessarily impressionistic [and]

speculative" (Beeson, 2010: 283). Systematic empirical evidence about authoritarian environmentalism is hard to come by, which leads scholars to rely on publically available documents, circumstantial evidence, and second-hand estimates to infer what goes on inside the "black-box" of the authoritarian state. Nevertheless, these ground-breaking discussions have laid out a major theoretical terrain for further exploration.

This chapter contributes a down-to-earth understanding of authoritarian environmentalism by supplying rich ethnographic evidence about the day-to-day processes of environmental policy-making at central and local levels of the Chinese state. I present evidence about not only how environmental policies move through different levels of the Chinese party-state, but also how different policy options are reframed, curtailed, or aborted before they see the light of the day. By attending to both policy outcomes and non-outcomes, this chapter provides an understanding of how the Chinese state systematically redefines the meaning of environmentalism in the policy framework. Much of previous work on this topic examines only policy outcomes (Beeson, 2010; Gilley, 2012; Wurster, 2013). The inclusion of non-outcomes in the analytical framework introduces a new layer of empirical specificity (Bachrach & Baratz, 1963). The rich empirical evidence allows for a better understanding of the implications of authoritarian environmentalism for global environmental challenges. The down-to-earth approach of this chapter contributes an empirically grounded and theoretically generative discussion of authoritarian environmentalism.

The empirical investigation leads me to conclude the following. Authoritarian environmentalism is a way of seeing. The extensive use of indicators predisposes authoritarian state actors toward certain policy approaches, and against certain others. Institutional setups of

the authoritarian state interact with the ecological conditions of natural processes to shape the extent of quantification in public policy-making, which in turn constrains the ways in which state power may or may not permeate through natural processes.

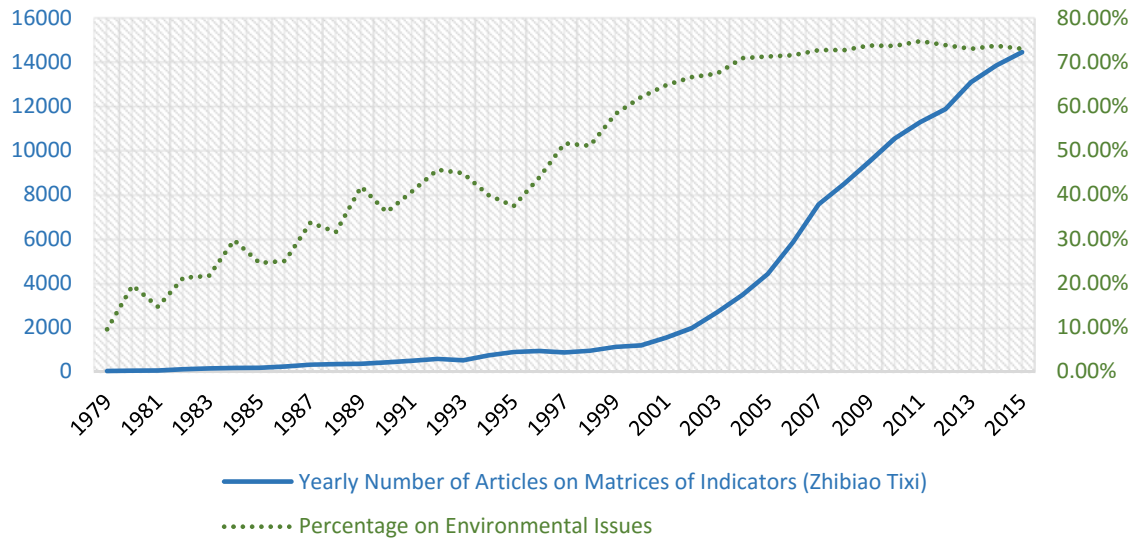
This chapter unfolds in the following order. The next section provides a descriptive account of command-and-control measures in Chinese environmental politics. This is followed by a review of the existing literature on quantitative indicators in public life. The review leads to a couple of major theoretical questions that need to be resolved. I attempt to answer these questions by introducing ethnographic evidence from two Chinese cities, both of which have pledged major environmental ambitions. The concluding section brings the set of empirical evidence to address key theoretical questions concerning quantification of public life and authoritarian environmentalism.

Command-and-Control Environmentalism in Action

A central feature of the self-branded socialist political system in China is its use of quantitative indicators throughout the process of bureaucratic decision-making. Indicators play a pivotal role in shaping Chinese policy approaches; policies are justified by them, debated with them, implemented according to them, and evaluated against them (Chapter 2; see also Ellman, 2014). In other words, the edifice of command-and-control authoritarian rule is, in large measure, established upon numeric instruments. The process entails the making of centralized national targets to be accomplished in a given time frame, the slicing of said targets into provincial, city, and township level shares, and the regular reporting and verification of local data back to the center.

While the centrality of quantitative benchmarking owes in large part to legacies of the planned economy (Chapter 2), the use of quantitative indicators has changed in major ways during the last few decades, as Figure 3.1 shows below.

Figure 3.1 Yearly Numbers of Published Articles on Matrices of Indicators (*Zhibiao Tixi*) and Percentages on Environmental Issues (1979-2015)



During the period for which data is available (1979 to 2015), the use of indicators gradually zoomed in on the environment, overpowering all other areas of policy-making, as indicated by the dotted line in Figure 3.1. Throughout the 1980s and 90s, the use of indicators was relatively "generalist," in the sense that the user was not committed to any given area of policy-making. There were, for example, a discussion of how to effectively break down national industrial output targets for each state-owned enterprise (Shao, 1979), and a proposal of a national agricultural output indicator system to balance the relationship between the state, the collective, and the individual farmer (He, 1981). Overall, throughout the late twentieth century, quantitative indicators were often used as a general policy instrument in the Chinese planned

economy. An article titled "*On Comprehensively Planned Index System for Industrial Production*" is perhaps the most vivid historical statement worthy of quoting in length.

> The socialist economy is a planned economy, which demands that the development in all sectors and areas be placed under central planning, so as to ensure rapid growth in the entire domestic economy as planned. The use of indicators and indices in the industry must be based on targets set by national authorities. … As long as industries can take full advantage of composite indices, major technological and economic activities can all be executed according to the directions determined in the national plan. (Hu, Yang, & Li, 1964: 10)

When the planned economy became a thing of the past, the popularity of indicators did not follow suit. While they may have lost favor in some areas of policy-making, it was decidedly not the case in the environmental realm. In fact, as Figure 3.1 indicates, since the early 2000s, quantitative indicators have been in consistently robust use in environmental policy-making. For well over a decade and counting, roughly three quarters of all published articles on quantitative indicators touched on some aspects of environmental policy making. The total number is still growing rapidly each year. For example, a prominent scholar developed a theory of urban livability, and proposed a set of indicators to measure the state of livability in cities across the nation (Zhang, 2006). Others used a set of indicators for incorporating climate change factors into the national transportation environmental impact assessment procedures (Ding & Xu, 2012).

It is clear that, during the years following the end of the planned economy, quantitative indicators are reincarnated with an environmental twist. Each year, thousands of

articles on quantitative environmental measures are produced by scholar-officials across the country. A scan of this literature indicates that every aspect of the natural environment, from water resource management to energy intensity of economic growth, has been subject to numerous quantitative evaluations. The predominant majority of these articles are explicitly policy-relevant. Many are results from projects commissioned by government agencies, or penned by policy advisors in government research institutes. Ratios, percentages, counts, areas, and averages have become a quintessential tool for environmental governance in China.

This brief overview of command-and-control environmentalism in China indicates that, since the promulgation of the first Environmental Protection Law in 1979 (Jahiel, 1998), China has developed a quantitative, indicator-oriented, and target-based approach to environmental governance. This chapter takes this observation as the starting point for empirical investigations and theory building in the pages to follow.

Indicators in Public Life: A Sketch of Literature

The ubiquity of quantitative indicators in public life is anything but new. From standardized testing scores to the Human Development Index, numbers have permeated into numerous areas of modern life. The growing centrality of numbers entails a temporal as well as a spatial dimension. On the temporal dimension, the historical evolution of numeric representations as a mark of objectivity has been extensively documented in the literature. In particular, historical developments ranging from the introduction of standard time (Zerubavel, 1982) to that of population censuses (Alonso & Starr, 1989) have been shown to deeply entangle with socio-political conditions of specific historical periods. Statistics of crime, sickness, and madness all constitute part of the standard lexicon through which modern societies are expressed (Hacking,

1990), not to mention the extensive use of quantitative cost-benefit analyses in business and government projects alike (Porter, 1996).

On the spatial dimension, a growing body of literature focuses on the global implications of quantitative indicators in public life. Thanks to its uniform structure, the language of numbers travels easily. It enables communication across vast terrains within a given nation. In fact, its reach is hardly ever diminished by boundaries of any kind. This makes quantitative indicators particulate suited for global governance. Empirical work on the use of numbers in global governance shows that indicators have major impacts on the allocation of funds, shifting of priorities, and choices of policy options in international development (Davis, Kingsbury, & Merry, 2012). It has also been shown that national policy-makers in the developing world are more likely to respond to global pressures of policy-making, when they are placed under the watchful eyes of quantitative indicators (Kelley & Simmons, 2015). A recent collection of essays takes stock of empirical research on indicators as a form of globally circulating knowledge, drawing attention to the myriad links between the globalization of quantitative knowledge and neoliberalization of governmental institutions (Rottenburg et al., 2015).

Taken together, this literature focuses on three sets of questions with regards to the modern experience of quantitative indicators. I shall briefly summarize each.

Authority and Quantitative Knowledge. The first set of questions center on the purveyors of numbers. Who standardize measures, collect raw data, assign weights, and produce indices? Who contests them and how? Numbers are meaningful representations of the world only in so far as they are backed by an institutional power that confers authority onto them. For the most part of

our history, the state had been an exclusive purveyor of quantitative knowledge (Desrosières, 1990), though many other institutional actors such as the UN and the World Bank have become all the more visible in recent decades (Davis et al., 2012). As the historian Theodore Porter argues forcefully in one of the founding texts in this literature, quantitative knowledge became a preferred expression of authority because of its perceived distance, impersonality, and above all, objectivity (Porter, 1996). Nevertheless, human fingerprints are all over the place, when it comes to the production of quantitative knowledge. A wealth of empirical accounts helps flesh out the processes through which incumbents in positions of power pursue their own agenda by manipulating, distorting, selectively presenting, or otherwise restructuring numeric representations (Alonso & Starr, 1983; Bowker & Star, 2000; Hacking, 1990; Igo, 2007; Ogborn, 1998; Power, 1999). These historically rich inquiries contribute to a better understanding of how quantitative knowledge has been used in the service of particular forms of authority across our modern history.

Building on this body of work, more recent studies examine power dynamics in the proliferation of indicator-based standards (Brunsson & Jacobsson, 2000; Ponte, Gibbon, & Vestergaard 2011). While in previous periods, actors with power shaped the local and national political landscapes with carefully crafted sets of indicators, the contemporary period is marked with internationally contested standards of trade, commerce, development, and aid (Collins, 2009; Jaffee, 2014; Quark, 2013). Standards, after all, are more sophisticated presentations of indicators, embedding them in quotas, grades, and standardized exchange values (Brunsson & Jacobsson, 2000). The process through which standards are created, therefore, is deeply reflective of power relations in the global marketplace.

Reactivity and the Discipline of Subjects. The second set of questions examine the subjects being quantified. Indicators create categories, which in turn, "make up people," as the Canadian philosopher Ian Hacking declares in his widely cited text on this subject (Hacking, 1990). This is not to suggest that statistics make up people out of thin air, but highlights how people act differently in the apparent presence of indicators that measure their activities (see also Espeland & Stevens, 2008). Most readers of this chapter are familiar with how we structure the grading process in college classes in order to shape students' learning in a particular way (see also Earl, 2012). In fact, empirical studies of educational settings have brought major insights into how standardized tests (Lemann, 2000), school rankings (Espeland & Sauder, 2007), and college admission standards (Wechsler, 2014) all constitute "gate-keeping" mechanisms that shape the structure of the American society.

Beyond the realm of education, the reactive and disciplining effects of quantitative measures have also been widely documented. Whether in autism diagnoses (King & Bearman, 2011), racial identification (Lee & Bean, 2010), or central bank management (Zayim, 2016), numeric representations are no less real than the empirical world they purport to represent. Elaborate forms of indicator-based mechanisms, in other words, have an observable disciplining effect on entire populations. People, whether individuals or collectives, are more likely to act in a particular way, when established measures render that way more normal, desirable, and therefore unproblematic. In this sense, social indicators work best when the empirical reality "can be remade in their image" (Porter, 1996: 43).

Quantitative Science in Modern Society. The third and last set of questions concern the rise of statistical science in and of itself. At its humble start, metrology was born as a practical extension

to proper mathematics (Porter, 1996). The keeping of accounts, the auditing of business transactions, and the counting of people and livestock all constitute a domain of practical expertise subordinated to the more theoretical exercises in mathematics (i.e. demonstration). Moreover, in much of history, we have had a "chaotic order of numbers," where multiple units of weights, measurements, and scales coexisted at the same time (Wu, 1937). One of the marvelous achievements of modern society, therefore, is the reigning of quantitative science that cuts out the fuzziness of everyday lives, imposes an order on what seems like a mosaic of people and things, and replaces all kinds of dialectal subtleties with a standard way of speech (see also Cronon, 2011).

Converting different qualities into common units of quantity, or the process of commensuration, is a radical social and political reform (Espeland & Stevens, 1998). This process entails a vast number of claims about what counts as equals. In fact, they are often assertions about what counts at all. In this sense, commensuration reshuffles the world in a way that glorifies some information and discards some other altogether. It renders the world calculable, predictable, and even actionable. It is, as many scholars have argued, "the explosion" of a particular way of accounting, and its related form of accountability (Bowker & Star, 2000; Power, 1999; Strathern, 2000).

Questions at Hand

The three key issues reviewed above have oriented much of past contributions to this literature. When the three thematic areas are placed next to each other for cross-fertilization, it appears that two questions remain to be addressed.

The first question concerns the relationship between state authority and quantitative knowledge, but also draws from the rise of quantitative science as a modern achievement. If the impact of quantification on modern society is as profound as some of the texts assert, should we expect the relationship between authority and quantification to be interactive rather than uni-directional? Existing accounts have provided extensive evidence of how state agencies take advantage of particular forms of quantitative knowledge to serve political ends, as I have reviewed in the previous section. In other words, authority shapes quantification. It therefore warrants hypothesizing that established practices of quantification, once codified into the routines of the state, will likely shape (if not constrain) the range of options available to the state as well. In other words, the adoption of quantitative indicators could have structural implications for the organization of the state. Extant theoretical literature, however, presents the relationship between authority and quantitative knowledge in a one-way light. It is worthy of further investigation to examine *whether and how the process of quantification affects the exercise of state power*.

The second question further explores reactive and disciplining effects of quantification. Existing discussions of reactivity often assumes that "[b]ecause people are reflexive beings who continually monitor and interpret the world and adjust their actions accordingly, measures are reactive" (Espeland & Sauder, 2007: 2; see also Sauder & Espeland, 2009). In other words, the (reflexive) agency of human actors seems indispensable for this theoretical enterprise. Is it possible to relax the assumption about human agency? Could non-human members of the world be similarly disciplined by quantitative measures? This question is particularly relevant, as recent developments in political ecology has greatly advanced our understandings of the material world by incorporating a vast array of non-human actors, the

materiality of which charts out trajectories of their own (Bennett, 2009; Miodownik, 2014; Tsing, 2015). Relatedly, with an increasingly expansive regulatory agenda, state authority has ventured into an ever-expanding swath of previously uncharted territory (Majone, 1996). Humans, in other words, are no longer the only subjects of state power. As an increasingly diverse set of non-human actors enter into the governmental field of vision, we need to further our theoretical vision accordingly. In the context of this chapter, this would mean the inclusion of environmental objects such as wetlands, air, and recycling processing centers into the analytical framework. *Does quantification have the same reactive and disciplining effects on humans and non-humans alike?*

These two questions are particularly worthy of empirical investigations partly because the literature on quantification has a decidedly historical flavor. Many studies in this tradition examine the historical emergence of modernity, whether in the eighteenth century fiscal-military state of England (Ogborn, 1998), the mid-nineteenth century British colonial government in India (Agrawal, 2005), the early twentieth century United States Army Corp of Engineers (Porter, 1995), or late twentieth century rural development in Tanzania (Scott, 1998). While the historical richness of this literature has much to be admired, it also tends to shy away from contemporary policy matters, especially policy issues that are relatively new on the global agenda. In other words, this theoretical literature is yet to fully tap its own potential to better explain policy-making in emerging areas such as the natural environment.

In this spirit, I use the two questions to orient my empirical investigation in this chapter, which seeks to establish a much-needed bridge between observations of environmental

policy-making and theories of quantification. This chapter contributes both empirical specificity and theoretical rigor towards a better understanding of authoritarian environmentalism.

Chinese Environmental Governance through Indicators

The ubiquity of indicators in China's governmental approach to environmental issues is hard to miss. Immersed in an ocean of livability indices, garden city matrices, human habitat indicators, sustainability barometers, and the like, China's environmental governance is an overwhelmingly quantitative enterprise. One of the most celebrated (Qiu, 2009), as well as loathed (Caprotti, 2014) projects, the Sino-Singapore Tianjin Eco-City project, for example, boasts a set of 22 Key Performance Indicators (KPIs) (Baeumler et al., 2009). The chart in Figure 3.2, which appears on the project's official website, is a full list of them. The same webpage states that "The planning and development of the Eco-city is guided by a comprehensive set of Key Performance Indicators (KPIs) covering its ecological, economic and social development."

The Tianjin project is by no means an outlier. During my ethnographic fieldwork in the Chinese central government and local governments, I encountered quantitative matrix on a nearly daily basis. Some were being developed, some revised, and other implemented down the chain of command. I documented the routine work of officials who drafted various sorts of measures, as well as those others whose daily responsibilities included reporting of raw data on each of the measures they were assigned to. My field observations consisted of numerous occasions on which officials disagreed on the merits of almost every indicator on the table, and those others on which entire sets of indicators were turned into *de facto* local statutes in a matter of weeks.

Figure 3.2 Twenty-Two Key Performance Indicators for the Sino-Singapore Tianjin Eco-City

Source: http://www.tianjinecocity.gov.sg/bg_kpis.htm

Before delving into a couple of episodes from the field, I shall briefly clarify the use of terminology. In Mandarin, the phrase "*zhibiao tixi*" (phonetics: juh-bee-ow tee-she) is often used to refer to indicators. The term may be literally translated into "matrices of indicators," as I do in Figure 3.1, but this translation does not do justice to the full range of meanings of "*zhibiao tixi.*" This phrase consists of three elements – "*zhi*" meaning index or indicator, "*biao*" meaning target, and "*tixi*" meaning system or matrix. In this light, when the notion of "*zhibiao tixi*" appears in Chinese academic or official literatures, it refers to, on the one hand, quantitative indicators which measure an object and set a target to be accomplished by a future time point. On the other hand, it suggests a matrix of indicators that constitute a unified system. Thus, "*zhibiao tixi*" means a number of things all at once – quantitative descriptions of reality, binding targets that hold officials accountable, and multiple indicators that constitute a

unified matrix. In this chapter, I use indicators, measures, indices, and matrices interchangeably, but they all carry the same set of connotations stated above.

When it comes to sustainability, the city of Chonggou in Northern China's Hebei province is not the first to come to mind. For generations, many households in Chonggou farmed for a living. When farming became untenable because of soil depletion and a host of other ecological issues, people were able to find employment in steel factories that never seemed to stop hiring. Not anymore. Because of overproduction and tightened anti-pollution enforcement, many steel plants have closed down; those that remain in business have to cut back on production.

The city leadership in Chonggou has been in the want for a way out. Several years ago, they experimented with a few business development strategies, the most successful of which helped grow a substantial grape and wine industry. The region, however, has been suffering from below-average precipitation in the past several years in a row. Grapes usually adapt to low-water conditions with minor impacts on yield, which is precisely the reason why Chonggou farmers and leaders went for them in the first place. The historically low levels of precipitation, however, turned out to be a real issue even for grapes. In fact, it led to a sweeping problem of desertification, effectively crushing the grape and wine industry. The city's business development agency hired a real estate consulting firm, Foundation Co., to "re-strategize the direction of development," according to a meeting minute from March, 2013. After a few months of fact-finding surveys and interviews, the consulting firm concluded that Chonggou is in a most ideal position to be a regional leader in "livable and eco-city" development.

So “livable and eco-city” it goes. Shortly before going into Chinese New Year recession in February of 2014, the city leadership committee passes a resolution to adopt “livable and eco-city” as its new overarching development goal. The resolution stipulates “comprehensive reforms to deepen sustainable development,” and delegates the city’s Bureau of Urban Planning as the lead agency for this effort.

When the government reopens for business after the New Year of the Horse festivities, the director of the Bureau of Urban Planning pulls together a taskforce for “livable and eco-city” development, whose first and foremost task is to determine a set of quantitative indicators that measure the extent of Chonggou’s “livable and eco-city” achievements and potentials. This taskforce is manned by one of the deputy directors of the Bureau (Mr. Wan), two consultants from Foundation Co., and three technical experts from UpTown, a Beijing-based research institute that specializes in advising local governments across Chinese cities.

For well over six weeks, members of the taskforce hold weekly meetings at the Chonggou city government compound to discuss different indicators for inclusion in (or exclusion from) the set. At each meeting, Foundation Co. consultants and UpTown experts deliberate different indicators, and Mr. Wan occasionally chimes in to steer the discussion into a particular direction.

At one such meeting, Mr. Liang from UpTown recommends the inclusion of a recycling indicator. He cites evidence that Chonggou has potential to lead recycling efforts in the region. To support his argument, Mr. Liang brings up examples of successful government-led recycling initiatives in Japan and Hong Kong. Just as Mr. Liang is about to go into details of the Hong Kong recycling program, Mr. Wan interrupts with a loud cough. “These all sound great,”

he clears his throat before continuing, “but there is a reason why recycling has been weak.” He goes on to elaborate that municipal recycling and industrial recycling are entirely different lines of businesses. In fact, municipal recycling falls into the jurisdiction of the Bureau of Physical Plants, whereas industrial recycling belongs to the Bureau of Environmental Protection. On the face of it, this is typical division of labor across municipal agencies. In a quantitative governance structure, however, such division of labor causes major havocs.

If recycling becomes integrated into the quantitative matrix, there will foreseeably be two main indicators – the percentage of total municipal solid waste recycled, and the corresponding percentage for industrial solid waste. At the end of the day, one figure will turn out higher, and the other lower. Whichever Bureau that ends up with the lower figure will inflict major trouble on themselves. Bureau chiefs are rational bureaucrats who act in anticipation of potential rewards and penalties. In order to avoid finding themselves with a lower data point, the two Bureaus in nearly all cities work hand-in-hand to block any recycling initiatives from coming into shape in the first place, according to Mr. Wan.

“Even if this problem does not exist, Chonggou is not likely to seriously pursue recycling,” Mr. Wan takes a surprise turn. The room goes into silence for a few seconds, almost in a ritualistic anticipation for some major revelation. Wan resumes in a noticeably slower pace, “We all understand the benefits of recycling. The problem though, is that we just can’t do it.” He flips through the pages of his notebook as if in search for some information, before closing it and leans forward,

> “Look, we have this major green economy program in the city. The Bureau has invested a lot of our resources to support green economy. Part of it is our garbage

> incinerating business. The city leadership measures the success of green economy, in part, by tracking the annual growth rate of the [garbage] incinerating sector. We have to keep feeding trash to these incinerators. Last year… Last year, well, we bought tons of waste from [the neighboring city], as some of you know, just so we could maintain the same level of feed to our incinerators. If we approve some sort of recycling indicator here, that will put my incinerator indicator in an unsalvageable situation."

"If you don't mind," Wan pauses and pulls out a cigarette from the pocket of his shirt before continuing, "I understand you are all experts in this area, but we may have to look for opportunities to reexamine this at a future time."

Mr. Liang looks down, and draws a big cross over the section of his prepared notes subtitled "Recycling."

Meanwhile, in the Southern Chinese city of Masai, a similar undertaking is unfolding. The city leadership has been working closely with the central Ministry of Housing and Urban-Rural Development (MoHURD), in the hopes of submitting Masai's experience in low-carbon development for nationwide replication. Throughout the Spring of 2014, Mr. Hong, the vice mayor for urban development flies to Beijing nearly every week to touch base with high-ranking MoHURD officials. Mr. Hong wants to make sure his powerful colleagues at MoHURD are fully onboard with the idea of endorsing Masai's "model of low-carbon eco-development." He

carefully moves up the level of the meetings – first with the deputy division directors, then the division directors, so on and so forth.

In these meetings, Mr. Hong always brings with him stories of "low-carbon eco-development success" from Masai. He prefers to tell some of the stories in person, but when time does not permit, his backup plan is a professionally designed collection of success stories printed on laminated paper. His chief secretary, Jian, always sits by the side, taking detailed notes of the conversations. Jian also carries with him a large shopping bag with dozens of copies of the "success stories" booklet. At times, Mr. Hong would invite a local developer or two to tag along. On other occasions, a bureau chief or two joins the trip.

At one such meetings with Mr. Pi, a Vice Minister at MoHURD, Mr. Hong pulls out all the tricks from his usual repertoire, but Mr. Pi shows little interest. When Mr. Hong talks, the steamy noise from the boiling water kettle sets a monotonous background. After a while, Mr. Pi emerges from his side of the grandiose office desk, walks over to the tea table, and signals Mr. Hong, Jian, and myself to join him on the (no less grandiose) mahogany couch by the tea table. Mr. Pi starts making tea, meticulously following the most extended protocol for tea ceremony.

Tea leaves sizzle briefly in hot water before drowning themselves to the bottom of the porcelain cup.

After pouring tea for the three of us, Mr. Pi raises up the tin of tea leaves with his right hand, looking at it attentively, and says, "I know this is excellent tea, maybe because I've tasted it, you've tasted it, many others have tasted it, and we all speak of it as excellent tea." He pours another round for us, and continues,

> "Whatever I say, you say, or others say, however, are just opinions. One's opinion is hardly ever the same as another's, but everyone recognizes this to be great tea, because there is an objective grade assigned to it. That grade is the scientific basis for calling it great tea, regardless of what people opine about it. You see, Mayor [Hong], this tea rose to the top because it is backed by hard science. That is the core of our trust in this tea."

Two days later, a project is commissioned by the Masai municipal government to "develop a quantitative matrix for low-carbon eco-development in [Masai]." Mr. Hong demands that he personally oversees the entire process of the matrix's development. As a first step, he calls for an emergency meeting with all bureau chiefs, to be held two days later, at 8:30 am.

On a breezy Friday morning, eight of the municipal bureau chiefs arrive at the conference room. They all sit at the roundtable. Most also arrive with one of their underlings who sit at the outer ring in the room. Mr. Hong walks into the room with Jian, and cuts straight to business, "Our low-carbon eco-development efforts have been like a floating boat. It is in need of an anchor." In a coastal city such as Masai, the boat and anchor metaphor seems to resonate well. Mr. Hong continues, "I have no doubt that a set of quantitative indicators will be the most ideal anchor for our purpose. I want to have a brainstorming session with you this morning. Let's talk openly about what each of us think should be included in this matrix."

An emergency meeting on a Friday morning at 8:30 denotes unusual importance. It is, after all, unusual for members of the city leadership to deviate from their morning routines of paper-reading and tea-sipping at this hour.

"Let me get this rolling first," Mr. Hong eyes around the room and says, "[Masai] is rich in wetlands, natural reserves, geological parks, arboretums and the like. It will be to our great advantage to include some indicators that can show the richness of conservation land in our city. What about one indicator for each type?"

Ms. Lan, chief of the Bureau of Water Affairs leans forward and says, "Much as I agree with the conservation ideals, I think the feasibility of new indicators will need to be more closely studied. For example, the size of wetlands changes seasonally. It will not be a reliable measure for governmental use." Ms. Lan then proceeds to give more technical details about wetlands.

Mr. Zhong, deputy director of the Bureau of Tourism, interrupts the technical discussion, "If I can chime in to summarize this, it is perfectly clear to us all that nature is unpredictable. Yes, unpredictable. It is Mother Nature, and we just can't predict how it works. This is not just a wetland problem. Most of the land use forms don't follow policy directives. I think Mayor [Hong] has raised a worthwhile issue, but nature does not go well with indicators." Others in the room nod profusely.

In the next half hour or so, others at the table voice similar concerns about the "disobedient nature." Mr. Hong looks more and more frustrated, occasionally turning to Jian to accentuate a few points on Jian's notepad. He takes a long breath before continuing, "I

understand changes are difficult, and it is not easy to be a pioneer in the work toward the eco-city ideal. I will closely study the problems you have raised about natural conservation, but do you have any suggestions?"

Mr. Zhang, chief of the Bureau of Urban Planning turns to one of his deputy chiefs, Mr. Luo, before speaking, "Little Luo and I have been thinking between the two of us about using our existing Urban Growth Boundary (UGB) for the purpose of indicators." The city of Masai is one of the several Chinese cities that have adopted local UGB as a statutory requirement, following the widely publicized success of Portland, Oregon's model (Nelson & Moore, 1993). The Vice Mayor seems interested, and signals him to continue. Mr. Zhang elaborates,

> "Instead of adding a series of indicators for different forms of conservation-worthy land use, we can take the UGB, and measure the percentage of land that falls outside the UGB. That is, after all, just a mix of various forms of natures, isn't it? We can enforce strict local statutes to ensure that this percentage does not go down over time. In fact, we might even be able to grow this figure with some of the policies about green space and expanded city parks. Most importantly, if we compare this percentage of ours with that of other cities, we have a natural advantage they simply cannot compete against."

Vice Mayor Hong appears extremely pleased, as well as relieved, with Mr. Zhang's comment, and instructs Jian to draft an internal memo for immediate release to the entire city government for implementation. A firm anchor is thus identified.

Vice Mayor Hong of Masai is by no means the only city leader in the country who has found a "firm anchor" in indicators. The coastal city of Haisu has aggressively marketed itself as a national leader of green buildings, a claim largely based on quantitative indicators.

During numerous internal meetings at MoHURD, Haisu is brought up as an example of how "the green revolution" in the building sector can lead the "low-carbon economic transition" in China. One afternoon in late May of 2014, the technical standards committee at MoHURD meets to discuss the implementation of the new national green building standard, which was made public in April of 2014, but will not be implemented until January of 2015. All members of the committee are either MoHURD officials or senior experts at the national planning academy and the national building science institute, both of which are within walking distance from MoHURD. Except for myself, there is another observer in the room who is not a member of the committee, Mr. Zhuo. He works for a Haisu-based real estate developer, Prosper Inc., and according to himself, "has been actively involved in the development of building standards all these years."

The committee discusses a wide range of issues, including a timetable for the transition from old to new standard, training for inspectors, and the role the committee shall play in advising provincial-level technical specifications. During the two-hour meeting, Mr. Zhuo keeps his head down on his slider phone, hitting the tiny keyboard the whole time. As soon as the meeting is over, Mr. Zhuo shoots up from his chair and dashes out to catch a conversation with Mr. Sai, the chair of the committee and also one of the division heads at MoHURD. Zhuo invites Sai to visit a recently constructed residential neighborhood in Haisu. Zhuo insists that he is

merely extending the invitation on behalf of the local Bureau of Urban Planning in Haisu, and that the trip has been cleared by the "Discipline Inspection Committee," or *jiwei*, the party's anti-corruption unit. It will be a one-day event, according to Zhuo, with site visits in the morning, and meetings with local officials in the afternoon. Sai nods in approval as he listens to Zhuo, before vocalizing his consent, "I will also take Long and Jun on this trip. Make appropriate arrangements for them as well." Mr. Sai notices me waiting with my clipboard behind Zhuo, and signals me to step ahead, "Little Li has been asking a lot of questions about green building standards," referring to me, "He should join us too." Zhuo nods profusely while uttering, "Good, good, good. I'm on it."

Late in the evening the next day, I find myself onboard the flight to Haisu after much delay. Mr. Sai sits in the business cabin, while Long, Jun, and I occupy a row of three seats in the economy cabin. Long and Jun are Mr. Sai's deputies. As they explain to me during our extended conversation in the airport lounge, I should expect the meetings in Haisu to be "very interesting." The new building standard, as with all national standards, is a highly sophisticated protocol for awarding certificates to whoever meets the standard. The heart of the protocol is an elaborate matrix of indicators. In the case of green buildings, the national standard goes into great length to lay out the dozens of indicators that shall be used to evaluate, for example, a shopping mall. While the standard makes clear certain qualifications that must be met before green building certificates can be issued, what remains unclear is the policy implications of these certificates in real terms.

As Long and Jun half-jokingly put it, what counts as green buildings is "both certain and uncertain." What they mean is that the standard fleshes out the technical benchmarks

in unambiguous terms, hence certainty. At the same time, how green buildings are counted by local governments remain an undecided matter. For instance, the Chinese green building certification system, like that of the United States, is tiered; there are one-star, two-star, and three-star certificates, where the three-star is the highest level. When it comes to aggregating a statistical figure, decisions have to be made as to how different tiers of green buildings are made to commensurate with each other. For example, many cities report their annual growth rate for green buildings, a statistic that must be based on the total square footage of green buildings. In counting the total square footage, however, cities often assign different weights to different tiers, to recognize different levels of achievements. The reported statistic, in an obvious fashion, is very sensitive to the choice of weighting scheme. City statisticians often tinker with various schemes to arrive at a "better-looking" figure, according to Long and Jun.

I must have showed surprise on my face as I listen. Long pats on my shoulder and says,

> "There is nothing strange about this. The appeal of numbers is that they are simple and straightforward. When we report numbers, we want to use very few of them to get across the message to our superiors (*lingdao*). It is really a common practice. That is just one of the many ways uncertainty plays out. When you hear more at tomorrow's meeting, don't be surprised."

The following morning at 9 am, Mr. Sai, Long, Jun and I sit at a table in the café of the extravagantly decorated hotel, which Prosper Inc. has arranged for us. Also at the table are two

Prosper Inc. executives who apparently have long acquainted Mr. Sai and his associates. After small talks about the delayed flight and air pollution, one of the executives cuts straight to business, “Our newly finished complex here in Haisu has been awarded a three-star green building certificate, and we should soon receive a LEED certificate from the Americans too. The company is also applying for a third certificate. It could be a German or a Japanese one. We wanted to introduce some of the internationally cutting-edge features to you later today, and hope you can provide some feedback.” He continues while Mr. Sai works on his pork bum, “The city wants to recognize our triply certified buildings, but they would love to hear what you think before anything becomes final.”

Mr. Sai is still working on the bun, but Jun chimes in, “We have had companies seeking double certificates, but triple …” He pauses and looks around the table, before continuing, “That is indeed unheard of. Would be worth checking out.”

As Jun later fills me in, Prosper Inc. has been nudging the Haisu local government to assign a heavier weight to buildings that are doubly or triply certified. This way, the local government will end up having a “better-looking” figure in its annual report, and Prosper Inc. can claim most of the credit, as it is the only developer in the entire region that seeks triple certification, at least for now. Such credit translates to a market advantage, as well as leverage for future favors from the local government. It is, after all, a mutually beneficial undertaking. In fact, over the course of the last decade or so, Prosper Inc. and Haisu government have developed a working relationship. On several accounts, they have tilted the matrix – in favor of new constructions against retrofits, residential buildings against office buildings, and downtown locations against elsewhere in the city. In all of these engineered weighting schemes, Prosper

Inc.'s properties are disproportionately represented in Haisu's official statistics. Their green buildings, in other words, are dramatically amplified through multiple layers of weighting procedures.

This time, when Prosper Inc. seeks to gain even further leverage through triple certification, the local authority in Haisu wants to rack up the stakes by bringing central government actors into the play. On the one hand, the presence of central government officials constitutes *de facto* endorsement of the statistical power game. On the other hand, although their manipulation of data is no secret, local officials also wants to remain in sync with their central counterparts. As one of the planning bureau deputy directors puts it during a meeting in the afternoon, "The support of MoHURD, especially Mr. Sai, is much appreciated. Our work can gain full momentum only when we follow the directions set by Beijing."

The group meeting in the afternoon features a series of presentations by planners, architects, interior designers, and engineers, all of whom hone in on the "internationally cutting-edge achievements" that apparently warrants special recognition. After the presentations, Mr. Sai is invited to the podium to give a concluding remark. He praises how Haisu has been a leading example of green buildings in China, but warns the dangers of the boom-and-bust cycle. He speaks of Prosper Inc.'s leadership in bringing cutting-edge green building technologies to China, but also heeds on how "the glow (*guanghuan*) of foreign technologies can sometimes overshadow the actual ecological benefits." The air in the room is charged with uncertainty upon Mr. Sai's candidly balanced comment. He clears his throat, slightly softens his voice, and goes on to share a few personal observations of green building technologies that do not acclimate well in China, including double-paned insulating windows that hardly ever achieve intended energy

savings, thanks to the Chinese liking for opening windows. Mr. Sai takes a pause before offering his final conclusion, “Nevertheless, triply certified green buildings are better guaranteed to work well. I am convinced that they are greener than the rest!” Everyone in the room applauses at the happy ending.

Discussions

The ubiquity of quantitative indicators in Chinese environmental policy-making is perhaps only a reflection of “the insistent quantifrenia” (Porter, 1996: 76) of our time. The full range of implications of quantification, however, are yet to be explored. Empirical evidence presented herein demonstrates that Chinese public officials practice quantitative indicators as the default option to approach environmental affairs. Over the course of the last few decades, quantitative tools have been drawn to the center stage of environmental policy-making. They constitute a standard lexicon through which nature is expressed in policy terms in the People’s Republic.

This “quantifrenia” has major implications for the organization of state power. Much of past research has examined how incumbents in positions of power manipulate the structure of quantitative indicators to advance their own agenda (Desrosières, 1990; Porter, 1996; Davis et al., 2012). Others have documented the controversies and struggles that revolve around various forms of quantification in public life (Alonso & Starr, 1983; Bowker & Star, 1999; Hacking, 1990). Empirical evidence presented in this chapter suggests that, while they are undoubtedly products of state authority and power struggles, quantitative indicators also shape the possible extent of state power. In Chonggou, the ability of the local state to make strides in recycling is impeded not by lack of state capacity, financial resources, or political will. The quantitative project has gained such centrality that it renders recycling not only burdensome to

the local state, but also outright counterproductive. In Masai, where the ecological ambition of the city leadership has to be anchored in indicators, officials are only able to pursue a limited level of conservation – one that erases the differences between mountains and wetlands, fields and forests, or creeks and reservoirs. Environmental policies, in other words, are only conceivable with measurable objects, predictable processes, and stable conditions. In so doing, environmental policies exclude the fluid nature of nature from entering into the sphere of the government. The state's role in nature is thus constrained by the applicable range of numeric indicators. In Haisu, the government's relationship with the developer is structured entirely around the organization of indicators. Both bureaucratic activities of the local state, and business activities of the local developer are oriented toward "better-looking" numbers. Green buildings, while central to Haisu's urban identity, are but a vehicle on which statistical ambitions ride. In this process, the environmental implications of green buildings are thrown out of the window, and the bureaucratic implications looms larger and larger.

Furthermore, the "quantifrenia" in environmental policy-making remakes the natural environment in the image of the quantitative indicators that persist. Indicators make up people, as has long been recognized in the literature. Indicators also make up the environment; they turn nature into a stable form we call environment. In the case of Masai, the adoption of a UGB-based conservation strategy removes the inherent complexities of nature from policy considerations altogether. In fact, the diversity of natural landscape is seen as a major source of complication for effective policy-making, as the evidence suggests. By treating different land uses outside the UGB in a homogeneous fashion, the policy allows for development activities on protected nature, as long as the developer compensates the encroachment on nature with the

same amount of "other" natures, in the form of hedgerows, rooftop gardens, city parks, and the like.

Paradoxically, when all of non-urban land uses are lumped into a single category, it does not equalize different forms of nature. Instead, it imposes a preference structure onto nature, where "easy" nature (such as hedgerows and city parks) takes over the reign. The natural landscape, therefore, reacts to quantification by giving rise to a hierarchical structure. In this sense, reactivity to quantification applies not only to humans, but also to non-humans, with similarly forceful disciplining effects. Their ecological qualities dictate how different forms of nature react to the structure of quantification. On the mosaic patchwork of nature, once a quantification regime is superimposed, the more measurable patches of nature prosper, whereas other pockets decline precipitously. The environment is but a thoroughly disciplined nature.

If these arguments are to be summarized in one sentence, it shall be the following. Institutional setups of the authoritarian state interact with the ecological conditions of natural processes to shape the extent of quantification in public policy-making, which in turn constrains the ways in which state power may or may not permeate through natural processes.

This conception of the relationship between state power and natural environment is fundamentally interactive at its core. In the existing literature, much has been said about the making of boundaries in quantification. Quantitative measures create categories, which in turn solidify and reproduce boundaries in the social world. The empirical evidence presented above, however, points to a boundary-making process that is thoroughly more interactive. Boundaries of the state are projected onto nature, tweaking and tuning nature to fit into the structure of the state. Biophysical qualities of nature, in turn, also lead state interventions into certain particular

directions. In the case of Chonggou, the boundary of the local state, which separates municipal and industrial waste control, is projected onto the overall waste stream, rendering the two sources of waste incompatible. Furthermore, within the Chonggou Bureau of Environmental Protection, the department for green economy is considered to be of higher importance than the department for recycling. This boundary, a hierarchical one, is also projected onto nature to favor economically generative environmental interventions. In the city of Masai, boundary making becomes a rather literal exercise. The Urban Growth Boundary (UGB) becomes the basis on which conservation depends. Here, not only do state-imposed boundaries (i.e., the URB) shape the structure of the natural environment, ecological qualities of nature also strike back, cornering the state into a particular kind of conservation. Boundaries of the state and boundaries of nature are mutually reinforcing.

Conclusion: Bureaucratized Nature and Authoritarian Environmentalism

These empirical observations about quantification in environmental policy-making provide major insights into the work of authoritarian environmentalism. Authoritarian environmentalism is a way of seeing. Over the last half century or so, the Chinese party-state has refined and institutionalized an elaborate quantification regime for environmental governance. Quantification provides a powerful lens through which actors in the authoritarian state handle environmental affairs. The Chinese state reincarnates time-tested processes of command-and-control measures from the Soviet era in the form of scientific governance. As evidence shows, the use of indicators predisposes authoritarian state actors toward certain policy approaches, and against certain others. Some authoritarian environmentalists, as we see in the city of Masai, are conservationists

of a particular type; they conserve to meet a target. Their environmental sensitivity is, above all, filtered through quantitative measures.

This particular form of authoritarian environmentalism is by no means unique to the Chinese party-state. Numbers have been reported to play a major role in environmental governance in post-colonial India (Agrawal, 2005), Colombia's Pacific rainforest region (Escobar, 2008), Mexico after democratization (Babb, 2001), and the all-powerful league of international organizations (Barnett & Finnemore, 2004). As a general observation, modern bureaucrats nearly universally embrace "a series of typifications that are always some distance from full reality" (Scott, 1998: 76).

The case of China, however, is unique in the sense that authoritarian environmentalism manifests in its purest form. The Chinese state exempts itself from even the thinnest pretense of democracy or post-colonial independence. When quantitative indicators are used in more democratic contexts, they often complement, or are complemented by, other mechanisms such as surveys, deliberations, and town halls (Bell & Morse, 2008). Over the years, Chinese state environmental agencies have developed and institutionalized all kinds of statistical manipulations at the local and central levels, to a point where the work of numbers becomes the only organizing principle of the environmental state. More importantly, its authoritative use of quantitative indicators is hardly ever placed in check. As empirical evidence suggests, environmental policies, whether about recycling, growth control, or green buildings, are all structured by, and only by, quantitative measures.

In this sense, authoritarian environmentalism is both strong and weak. When the numerical device picks up a certain area of environmental concerns, such as globally accredited

green building technologies, the political structure proffers rich incentives to pursue these environmental ends. Authoritarian environmentalism can therefore be particularly effective in tackling these challenges. On many other occasions, however, the quantification regime fails to "see" the pressing set of environmental challenges of our time. The state fails to engage in policy areas that are rendered less visible by the organization of quantitative indicators.

The main problem of authoritarian environmentalism is that, for the most part, it is not about the environment, but about the state. In its attempt to transform environmental affairs into governable objects, the state projects an image of itself onto nature. The authority of authoritarian environmentalism, in the final analysis, lies in the process of quantification. It is a process that transforms the hodgepodge of natural relations into actionable, measurable, and predictable numbers. It disaggregates the complexity of ecology into clear-cut causal arrows for policy-makers. It is a cold iron cage.

Chapter 4. Disengaged Environmentalism in International Development

> *The history of environmental lawmaking suggests that people are best able to change their ways when they find two things at once in nature: something to fear, a threat they must avoid, and also something to love, a quality they can admire or respect, and which they can do their best to honor.*
>
> *Jedediah Purdy (2015: 288)*

Environmental challenges are not bound by political boundaries. In fact, the complexity of our environmental problems are compounded by the presence of political boundaries. In water resource management, the impact of upstream development on downstream ecology is often a major source of international conflict (Jacobs, 2002). In air quality monitoring, the impact of air pollution is felt beyond the nations where pollution originates; emissions from Canada, Mexico, and China have measurable effects on air quality in the United States (Park et al., 2004). In waste disposal, international transfer of garbage raises major ethical and political questions of justice and national responsibility (Pellow, 2007). The scale, intensity, and durability of contemporary environmental challenges necessitate a framework of understanding that extends beyond the national scale.

In environmental governance, the national state is deeply entangled with forces from above and beyond. With varying degrees of autonomy afforded to national governments, entities ranging from supranational bodies (e.g. Directorate-General for Climate Action of the European Union), transnational actors (e.g. ICLEI - Local Governments for Sustainability), to international alliances (e.g. US-China Eco-City Partnership) play an increasingly salient role, not to mention the mushrooming of international environmental non-governmental organizations (Betsill & Corell, 2001). This mosaic of power relations in global environmental governance fuses together multiple scales, cuts across public and private authorities, and sets up a labyrinth of bureaucratic structures. While it may seem tempting to pull out a slew of new terms (e.g. multi-scalar governance, or hybrid power) to describe the current enterprise of environmental governance, it remains unclear how international environmental governance is *accomplished*, as the British geographer Harriet Bulkeley recently argues (Bulkeley, 2015).

Much of existing discussion of global environmental governance subscribes to the world society theory, a long standing theoretical tradition in sociology. Extant literature explains the rise of globalized environmental governance as a result of diffusing normative commitments to the natural environment on a worldwide scale (Boli and Thomas, 1997; Roberts, 1996; Schofer & Hironaka, 2005; Hironaka, 2014). The specific mechanisms of environmental diffusion, as well as the ways in which environmental institutions engender on-the-ground impacts, remain a contentious matter among scholars.

In this light, a closer scrutiny of the everyday constitution of global environmental governance is in order. How is global environmental governance accomplished on the ground? What kinds of policies are enacted through international environmental development? How does

on-the-ground experiences of international environmental development inform our understanding of the broader process of global governance?

To address these questions, I provide in this chapter a comparative analysis of two international environmental governance initiatives that share the explicit objective of greening China's urbanization through international collaboration. The two initiatives involve the same Chinese central government agency, the Ministry of Housing and Urban-Rural Development (MoHURD), but different actors on the international side. The first initiative is partnered with the Directorate-General for Energy (DG Energy) of the European Union, and implemented through the European Union Delegation to China (EUD). The second is partnered with the United States Department of Energy (DOE), and implemented through the United States Embassy in Beijing. One is situated in the broader framework of "EU-China Urbanisation Partnership," and the other in "US-China Eco-City Partnership." The two projects, while sufficiently similar at the outset, evolved into orbits of their own color in a matter of a few years. Their divergent paths, as well as common resorts, shed important light on mechanisms of global environmental governance.

Evidence suggests that, paradoxically, international development helps to engage a new version of environmentalism, that of disengaged environmentalism. It entails a more salient global environmentalist consensus on the one hand, and a less committed environmentalist agenda on the other. It engages the notion, the formality, and the institutional appearance, but all the while disengages the action, the substance, and the underlying purpose. The disengaged environmentalist has a conspicuous lack of attention to the real, tangible, and experiential implications of environmental challenges. Disengaged environmentalism reflects a

broader challenge for environmental ethics of our time. The global scale of today's environmental challenges makes it more difficult than ever for the individual actor to discern the environmental consequence of personal action. An understanding of disengaged environmentalism in international development thus offers a unique opportunity to examine earthly sensibilities of our time.

World Society Theory and Its Environmental Turn

In the sociological literature, the rise of global environmental governance has provided renewed empirical momentum for the revival of a time-tested theoretical tradition – that of the world society theory (Thomas & Meyer, 1980; Boli & Thomas, 1999; Longhofer & Schofer, 2010; Hironaka 2014).

The world society theory emerged from experience of the postwar boom, which was felt globally, but more acutely so in the United States. The post-war rebuild and reconstruction efforts, unequivocally led by the United States, represented rapid transformations of social structures. At the time, different countries in the world seemed to be experiencing similar transformations, such as rapid expansion of educational systems (Meyer et al., 1977) and the growth of cities and urban populations (Davis, 1965). As these transformations became the hallmark of the postwar experience, the thriving discipline of sociology responded to account for the common experience of growth, prosperity, and modernization (Meyer, 1980). In this context, the betterment of the human condition at the material level, and the spread of freedom and human rights at the ideal level led scholars to celebrate the birth of the world society. A common vision of development is said to be homogenizing cultural differences, unifying otherwise conflicting objectives, and championing the convergence of global norms (Thomas et al., 1987).

Scholars speak of worldwide models (Meyer et al., 1997), enveloping frames (Boli & Thomas, 1997), universal blueprints (Frank, Hironaka, & Schofer., 2000), and common principles (Meyer, 2000). They argue that boundary-transcending values, such as human rights, give rise to a common set of globally celebrated cultural norms. The normative power of these higher values helps disseminate particular forms of governing institutions and practices that match onto said values. Leading scholars in this tradition further argue that, when a global model of governance encounter challenges and conflicts from local alternatives, the former possesses much more "durable authority" over alternatives, largely because of the "statelessness" and universality of global models (Meyer et al., 1997).

Environmental protection's rise to prominence on the global agenda during the late twentieth century injected fresh empirical momentum to this theoretical tradition. Theorists argue that notions such as sustainable development represent the latest movement of the world society's diffusion of values (Boli and Thomas, 1997). Studies show that a rational scientific model of environmental governance, along with the related organizational machinery (e.g. the United Nations Environmental Programme), came to dominate the contemporary narrative on the natural environment in the 1990s (Roberts, 1996). The spread of these organizational forms, and of the corresponding environmental narratives in the world society, are also shown to account for the adoption of environmental laws and regulations in nations across the world (Frank et al., 2000).

Furthermore, empirical studies of international environmental affairs lead many scholars to conclude the declining significance of national states. Some argue that transnationally-framed narratives on the one hand, and globally-formulated institutions on the

other, overpower individual nation-states in shaping environmental policy outcomes (Schofer & Hironaka, 2005). Other scholars, while acknowledging the continuing relevance of national governments, nevertheless argue that the "new" role of the state can only be fully understood when placed under the "complex set of actor constellations, referred to as environmental governance" (Janicke, 2006: 100). A recent study contributes further evidence that international non-governmental organizations (NGOs) are more effective than domestic NGOs in shaping pro-environmental reforms, which leads scholars to conclude that the trans-boundary nature of contemporary environmental challenges render individual nations far less capable of acting on their own terms (Longhofer et al., 2016). These findings help confirm and reiterate a central tenet of the world society theory that the social context of action (i.e. the world society) is more robust than the interest of individual actors (i.e. the nation-state) in predicting policy outcomes (Amenta, 2005). It therefore follows that the global model of environmental governance can easily penetrate the legal and regulatory framework of any given nation, leading to the convergence of environmental policies at the international level (Hironaka, 2014).

These empirical and theoretical contributions to the world society tradition have improved our understandings of the mechanisms of global governance in general, and a wide range of specific issues in particular. Meanwhile, some of the theoretical questions are yet to be fully addressed, including the process of institutional isomorphism and the transformative capacity of institutions. I shall briefly touch on each of the two.

Institutional Isomorphism and Its Resistance

Over the years, the world society literature has received its fair share of criticisms. As the theoretical enterprise expands to a wider range of policy areas, this theoretical framework "seems

to have an answer for everything" (Rocca, 2015: 3). In particular, the late Fred Buttel pointed out that a major weakness was that the theory followed an unwarranted assumption of cultural consistency. As a result, the theoretical vision leaves little room for dissonance and conflicts of any kind (Buttel, 2000). In the introduction to a collection of essays in the world society tradition, even leading theorists concedes that the theory "touches only tangentially on the issue of conflict, the *sine qua non* of most social-scientific research" (Boli & Thomas, 1999: 5). Moreover, as the German political scientist Frank Uekötter perceptively noted in his recent account of German environmental history, "[d]epicting the history of environmentalism as a grand awakening makes for a strangely diffuse narrative that is devoid of actors, interests, and turning points" (Uekötter, 2014: 101).

An emerging line of empirical inquires also calls into question one of the central arguments about institutional isomorphism. Halliday & Carruthers (2007, 2009) document the recursive sets of cycles between national level lawmaking and transnational level norm-making, which suggest that the relationship between transnational values and individual nations are much more negotiated and contingent than previous recognized. Chorev (2012) further points out that, in addition to responding to global pressures, countries also react to other countries' responses to the same issue – a textbook example of endogeneity. There is simply as much institutional learning across nations, as there is institutional diffusion on a global scale. Chorev terms this process "reactive diffusion." Zinda (2014) reports how local governments often times display hesitation, if not resistance, to globally formulated models of conservation. These recent studies make it sufficiently clear that a "straight line" diffusion model alone is inadequate; the rise of global environmental governance is complicated by recursive, reactive, and resistant forces, which the world society theory underappreciates in its current shape.

Institutions and Outcomes: From Decoupled to Loosely-Coupled?

Even when the issue of institutional isomorphism is set aside, it remains to be seen how the world society theory can satisfactorily address the mismatch between institutional commitments and environmental outcomes. As Fred Buttel argued, it was unclear whether environmental institutions had "any definite connections with actual environmental protection outcomes" (Buttel, 2000: 118). This problem of mismatch has long been recognized (Meyer & Rowan, 1977), but the debate is far from settled.

Just among world society theorists themselves, there are two distinct responses to the question of institution/outcome mismatch. The first response insists that decoupling is a normal, if not desirable, feature of modern institutions. Scholars argue that "decoupling enables organizations to maintain standardized, legitimating, formal structures while their activities vary in response to practical considerations" (Meyer & Rowan, 1977: 357). In fact, the gap between structures and on-the-ground practices is seen as a general feature of not only institutions, but also individuals and organizations alike (Meyer, 2010). This strong response, which I shall refer to as the "decoupling view," takes for granted the inherent discontinuity between statements and outcomes of institutions (Brunsson, 1989). This view does little to explain the observed gap, but seeks to assert that decoupling is the normal state of being, effectively rejecting the premise of Buttel's (2000) original question.

More recent contributions to this tradition, however, appear to steer away from the "decoupling view," and to develop a second, more mild response. It is said that instead of being fully decoupled, institutions and outcomes are loosely coupled (Hironaka & Schofer, 2002), and that they can be more tightly matched onto each other when "institutional effects" are

at play (Schofer & Hironaka, 2005). These authors disentangle the notion of institutional effects into the degrees of structure, penetration, and persistence of the institution. It is further suggested that, institutional forces consistently push actors in a way that generates systematic change in favor of tighter coupling (Schofer et al., 2012).

Under this "loosely coupling view" of institutions and outcomes, tighter coupling is largely a matter of time. It was said that policy outcomes do not manifest themselves in a "smoking gun" model, but often times follow a "bee swarm" model of social change (Hironaka, 2014). The "bee swarm" model stipulates weak causal relationships between multiple institutional forces and a given outcome. Social action, according to this view, is triggered by a dense constellation of factors working in the same direction (Meyer & Jepperson, 2000). In this sense, the world society is conceptualized as a cultural environment which envelops the actions of individual nations (Finnemore, 1996). This perspective, according to a long-time advocate, "shifts our attention from autonomous actors, organizations, and singular norms to institutionalized world cultural structures – cultural structures that are global in scope" (Thomas, 2016: 76).

Toward an Epistemologically Open Approach

The environmental turn in the world society theory has raised more questions than it answers. It shall be noted that part of the difficulty is that the empirical work seems to have adopted methodological choices ill-prepared for the kind of questions there are. Throughout the last two decades, event history analysis has been the preferred approach, prevailing in studies of environmental treaties (Frank, 1997), environmental organizations (Meyer et al., 1997), national environmental activities (Frank et al., 2000), environmental impact assessment (Hironaka, 2002),

and environmental voluntary associations (Longhofer & Schofer, 2010), just to name a few. While sophisticated event history analyses provide crucial empirical evidence with longitudinal data, it remains unexplained why event history analysis became the dominant methodological approach for world society theorists. In fact, the use of event history analysis is especially worrisome, because of the inherent assumption that the "event of interest" is the natural course of action (Yamaguchi, 1991). The method, when applied to the study of death, marriage, or job promotion, for example, is rather unproblematic, because these events occur with a high level of certainty, if not absolute certainty. When applied in the realm of environmental governance, the same methodological assumption (that of institutional isomorphism, or cultural diffusion) is precisely part of the theoretical hypothesis under test. In this sense, the methodological orientation predisposes empirical researchers to a "friendly" mode of analysis. Moreover, the quantitative data that drive event history analyses also tend to be relatively insensitive to different local experiences of environmental governance. For instance, each additional national park is rendered as a unit of increase in the indiscriminate tally of national parks, thereby precluding an understanding of different mechanisms, actors, and power dynamics behind the establishment of national parks. Environmental governance is anything but a black-and-white, either-or problem, but event history analyses operate under precisely such an unwarranted assumption.

To advance our understanding of global environmental governance, it is imperative to subject existing theoretical arguments to a rigorous and unbiased empirical test, which shall be epistemologically attuned to potential evidence to the contrary. To that end, I provide below a comparative analysis of two international environmental governance initiatives that share the explicit objective of greening China's urbanization through international

collaboration. The two initiatives involve the same Chinese central government agency, the Ministry of Housing and Urban-Rural Development (MoHURD), but different actors on the international side. The first initiative is partnered with the Directorate-General for Energy (DG Energy) of the European Union, and implemented through the European Union Delegation to China (EUD). The second is partnered with the United States Department of Energy (DOE), and implemented through the United States Embassy in Beijing. One is situated in the broader framework of "EU-China Urbanisation Partnership," and the other in "US-China Eco-City Partnership."

This comparative exercise provides a particularly valuable empirical test for the world society theory, as the two cases fit squarely into the same global environmental conceit of "ecological urbanization." Both represent a major undertaking to diffuse said environmental ideal through joint governmental action. Specifically, both cases entail interventions in a select number of Chinese cities (ten pilot cities in the European project, and six in the American project) to spearhead environmental policy reform in China. While preparation and negotiation for both projects started in as early as 2012, the American project was not officially launched until July 2013, and the European project March 2015. At the time of launch, both cases had finalized (and widely publicized) the list of pilot cities for project intervention. Both projects are expected to achieve financial and institutional self-sufficiency over the long run, after an initial term of governmental support from their respective home units. Because of these common commitments at the outset, the two cases constitute most likely examples of world society in the age of sustainability. The empirical trajectories of these two cases, therefore, offer crucial insights for advancing our understandings of global environmental governance.

In the pages to follow, I provide ethnographic observations of negotiations between Chinese government officials and their European and American counterparts. I supplement additional evidence from the field, when I interacted with Chinese officials, planners, and academics who played pivotal roles in shaping the dynamics of the two projects. In doing so, this chapter provides a grounded description of transnational environmental governance as officials and diplomats engage with structural forces from both within and without the state apparatus. Following conventions in presenting ethnographic data, I use the present tense throughout the next section (Davies, 2008). All names of persons and places have been altered to protect the identity of research subjects.

International Environmental Governance in China

"We envisage this project to provide client-centered technical assistance," says Mr. Edwards in his iconic British accent, at a workgroup meeting with Chinese officials on a hazy Beijing morning in April of 2014, "which necessitates a better understanding of urbanisation challenges unique to China." He goes on to elaborate his experience with urban development in Southeast Asia and elsewhere, perhaps as a preface to his revelation that the current project is his first serious assignment to China. "But," he raises his right index finger and continues in high spirit, "I am a resident of Hong Kong!"

Edwards is one of the three long-term technical experts hired by the EUD to implement the current project under the "EU-China Urbanisation Partnership" framework agreement. In his sixties, Edwards has worked with several development banks and agencies as a short term consultant, or STC, in his urban planning career. He is hired for the current position,

because of his “main expertise in advising local authorities throughout Asia,” according to an undated memo from EUD to MoHURD.

One of the topics for discussion on the meeting agenda is pilot city selection. Edwards assumes the lead role for this task, as he is the only urban planner on the European team of experts. His leadership, however, is crippled by his lack of first-hand knowledge of cities on the Chinese Mainland. After Chinese officials at the meeting take turns in proposing cities of interest, Edwards leans forward and says, “Perhaps the best strategy is to use a scientific matrix to rank all cities. We need comprehensive data about cities to objectively compare them.” He further elaborates his past success in using quantitative data for evaluating cities in Vietnam and elsewhere, and concludes, “pilot city selection shall be based on the most reliable source of information. Numbers are more reliable than anecdotes by a large margin.” While some Chinese officials have reservations about the practicality of collecting data for all 656 cities in the country, most welcome the idea of a “scientific approach.”

The next day, Edwards directs his assistant Lynn to start working on a “comprehensive database.” Lynn is a Europe-educated Chinese national, who is still early in her career as a planner. Lynn is instructed to pull together data about population, GDP, and a few other common socio-economic measures. In addition, Edwards specifically asks for the inclusion of a transportation network measure (to make sure European experts can fly into the pilot cities with ease) and a local legislative capacity measure (to make possible policy experiments).

As Lynn works on the dataset, words arrive that the city of Lejiang in Southern China has been determined by a high level MoHURD official to be a particularly ideal candidate to pilot with European technical assistance. Edwards is not pleased. He rants about the

"intrusiveness and abruptness" of the out-of-the-blue nomination, and vehemently defends the integrity of the "scientific approach." Nevertheless, Edwards accepts the invitation from the Lejiang government to join a three-day "fact-finding mission" in the following week, "It won't hurt to just take a look, I suppose."

The trip turns out to be a blast for Edwards and others on the team. With a tight schedule filled with presentations, site visits, lavish banquets, meetings with top bureaucrats (in a resort hotel), and even a visit to the circus, Edwards and his colleagues have no shortage of appreciation for the hospitality of the Lejiang government. During dinner one day, one of the vice mayors introduces to Edwards the name of the city's main artery, *Lianren Lu*, or Lovers' Road. Edwards turns to the translator, his eyes squinty with suspicion, "You serious? A Lovers' Road?" The translator dutifully utters the same sentence in Chinese back to the vice mayor, though everyone else at the table are already laughing at Edward's reaction. The vice mayor replies half-jokingly, "*Lianren Lu* is best for taking a walk after dinner. Come back for a second time, and I'll find you a lover to walk with." The room bursts into a loud roar of laughter.

On the way back to Beijing, Edwards concedes, "[Lejiang] does seem to have a lot of potential." The next Monday, at the request of Edwards', Lynn begins to rework the dataset by assigning different weights to different measures, and alternating between different measures for the same construct. After each trial run of the ranking of cities, she has Edwards eye over the preliminary results, before making further adjustments. For example, Edwards pleasantly agrees to Lynn's suggestion of using GDP per capita, rather than GDP, as Lejiang has a relatively small population proportionate to its economy. The result of the ranking exercise

puts Lejiang among the very top of the list. A big grin emerges on Edwards' face upon seeing the result, "I knew this would work."

Meanwhile, the American project already has a confirmed list of pilot cities, the nomination of which is entirely dictated by MoHURD officials. Although the project's launch event in July 2013 marks its official start, local officials in the six pilot cities are still in the wait for "the real deal" a year later. Mr. Kong, deputy director of urban construction in the Northern Chinese city Hewei, remarks at a roundtable discussion in June 2014, "In this past year, I have had the fortune of representing [Hewei] at numerous events in this Sino-US project." He continues in a deferential tone typical of Chinese officials, "I witnessed several memorandum signing ceremonies, participated in demonstration site visits in Shanghai, and hosted delegations of Chinese and American technical experts visiting [Hewei]." He pauses, looking down at his notebook, the cover of which bears a hammer-and-sickle symbol of the Communist Party. "What's next?" He looks back up, "I have been thinking about more practical impacts, but wanted to hear what everybody else had in mind."

During tea break, a small group of about ten people forms around Kong. Most of them are local officials from the other pilot cities, but Dr. Zhang, director of MoHURD's Sino-US taskforce is also among them. Kong's remark resonates with these local officials. They join each other in lamenting that the initial excitement of becoming a pilot city has dissipated over time. "Those American PhDs" have produced several reports about each city. Chinese officials, in the meantime, have filled surveys, participated in roundtable workshops, and commissioned new plans for their cities. It remains unclear whether being a Sino-US pilot eco-city will bring

about any real changes. They yearn for a specific technology, a concrete policy proposal, or even a tangible machine – something they can feel and touch. Zhang listens attentively.

On the cab back to the MoHURD compound, Zhang makes a long phone call to his counterpart at the US Embassy in Beijing. The notorious traffic condition in Beijing turns cabs into his mobile office, as Zhang likes to sarcastically comment. During the phone call, he sides with the sentiments of local officials, and proposes "a practical next step." Specifically, Zhang recommends (and the person on the other end seems to ardently agree) that a matrix of quantitative indicators be developed for the Sino-US eco-city partnership. He reasons that, from the perspective of the joint partnership, a matrix would allow for unbiased comparison of all six cities. Furthermore, it would also enable local governments to better monitor their own achievements (or weaknesses). Perhaps more importantly, the matrix can be used to demonstrate the "real impact" of Sino-US partnership, through the proverbial "before and after" comparisons. A matrix, in other words, is "the real deal" in putting to rest any doubt that the Sino-US partnership can make an impact on Chinese cities. After all, what can be more unambiguous than statistics? Three months later, a matrix of thirty indicators, ranging from "per capita green space" to "energy intensity per unit of GDP," is officially incorporated into the Sino-US eco-city pilot program.

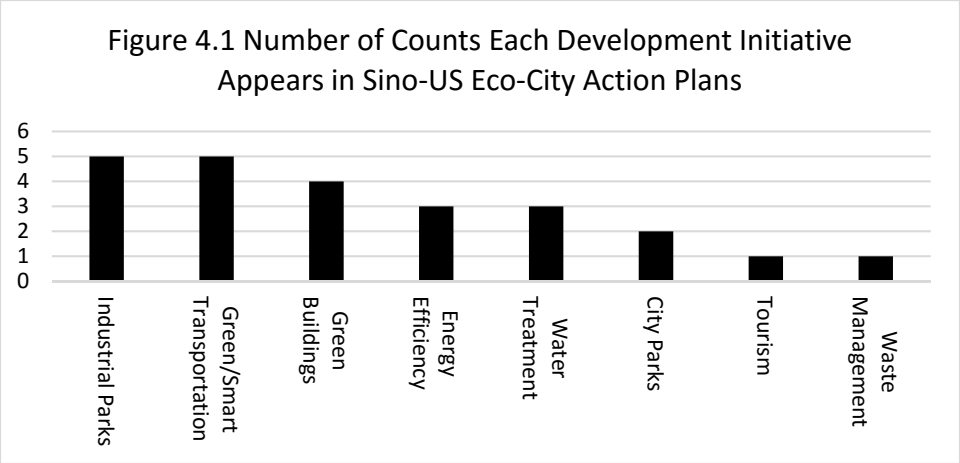
The sense of inactivity about the Sino-US project is also felt beyond the circle of government officials. The project is nominally a joint governmental undertaking, but is also backed by business interests of a few dozens of American companies, represented by the American Chamber of Commerce. Company representatives are just as eager, if not more so, to see on-the-

ground collaborative projects materialize. One business representative, Ms. Dong, a well-connected sales manager of an American company in the energy efficiency business, reveals during my interview that "it is becoming harder to justify spending company money to attend these meetings." She lowers her volume before continuing, "I hear they have reports for every pilot city. The problem, I think, is that the Embassy does not know what to do with these reports. They can't just come to me and say, 'Little Dong, your company takes this share of the cake.' It is, you know, the American government. They don't want to meddle too much with businesses." Dong goes on to elaborate her views on various "information asymmetries" that hold back the progress of effective business deal-making.

At the center of the bilateral partnership are MoHURD, the US Embassy (representing DOE), American companies, Chinese pilot cities, and a handful of American cities (sister city hopefuls). During our lunch one day, Director Zhang explains to me that, in an ideal world, the pilot city would showcase bilateral collaboration that (1) aligns with MoHURD's national development priority, (2) strengthens the research capacity of DOE-funded research labs in the US, (3) utilizes some cutting-edge technology from one or more American companies in the business consortium, (4) meets the real need of the pilot city, (5) showcases a major achievement for which the American sister city is known. As he speaks, Zhang draws with his finger a five-circle Venn diagram on the table, before pointing the chopsticks at the overlap of all five circles, "that spot may not even exist." Yet, it falls on Zhang to make the Sino-US collaboration work. He likes to describe himself as having a "sandwich" job, alluding to the pressure he feels from both the American and Chinese officials on this project.

In practice, five of the six pilot cities end up rebranding one of their existing development projects "Sino-US" – an art district, an ocean city, a green economy development zone, a lakeshore neighborhood, and a business district, respectively. All five projects have been planned before the inception of the Sino-US partnership. In fact, some of these projects are near completion at the time of rebranding. These various projects in the pilot cites, now known under the same banner of Sino-US projects, are initially planned, designed, and constructed without knowledge of the Sino-US partnership. Of particular interest is the fact that one project is previously known as "Swedish eco-city," thanks to its alleged replication of Stockholm's well-known Hammarby Sjostad district. The only one of the six cities that does not rebrand an existing development project, however, cites its green building code as evidence of its participation in the Sino-US eco-city partnership. This building code, curiously, goes into effect on April 1, 2013, three months before the launch of the Sino-US partnership. In fact, the text of the building code begins with the declaration that "Terms set forth in this code are in accordance with the National Law on Energy Conservation, the State Council Mandates on Public Building Energy Efficiency, and on Private Building Energy Efficiency, and other related laws and regulations." The Sino-US gig is but a convenient appendage.

In September, 2014, each pilot city submits to MoHURD an action plan for approval. Figure 4.1 is a summary of the number of counts each development initiative appears in the action plans.



The six pilot cities exhibit a clear preference for industrial parks, revamped transportation networks, and green buildings, all of which are major infrastructural undertakings. Most of the action plans touch vaguely on the need for "advanced development experience of America." The only two explicitly American references are an industrial park designed by a New York-based architect, and an art district jointly designed by an international group of firms, one of which is a member company of the American Chamber of Commerce in China.

The European project, launched two years after the American partnership, enjoys a certain latecomer advantage. Dr. Zhang, who directs both the European and the American projects on the Chinese side, takes pleasure in giving his "stump speech" for the European project. On various occasions, he openly discusses how the European project should "aim for a bigger deal" (*gan dashi*), alluding to the lack of substantial achievements in past international projects. In one of his addresses to a group of Chinese officials in April 2014, he begins, "the design of this project is based on our past experiences in international collaboration. This project creates a much-needed platform to bridge Chinese and European ideas, using European experience and

expertise to fill the needs of China's cities. We create synergies to help the national leadership with the 'top design'[4] for ecological civilization." The audience applauds as if on cue.

Zhang goes on with the "stump speech," which includes details about intended outcomes of the project. Zhang and his European counterparts envision the delivery of (1) an online chatroom for European and Chinese urban development professionals, (2) a knowledge base consisting of European and Chinese eco-city planning best practices, and (3) capacity building programs for Chinese city officials, along with other objectives.

These intended deliverables, however, are called into question by a panel of six senior Chinese urban planning officials and professionals during a technical evaluation meeting on June 13, 2014. This meeting takes place in the MoHURD compound, where European experts take turns in giving presentations of the project's intended outcomes, followed by an extended Q&A session with the panel.

After the presentations, a well-known senior planner, Ms. Jiang, opens her comment with a metaphor, "There appears to be a major disconnect between Western medicine and the Chinese patient." She goes on to elaborate,

> "My colleagues and I have had numerous exchanges with foreign experts about problems in Chinese cities. Our cities are having a lot of trouble. Some of them have tried Western medicine, which may help with the symptoms but never really gets to the root cause of the problem. Western techniques and ideas have not yet proved useful in solving some of the most eminent problems facing Chinese cities. The prescriptions in your presentations look like yet another set of Western

medicine. Some of the best Chinese hospitals now offer integrated Chinese and Western medicine (*zhongxiyi jiehe*). That would be nice for our cities."

Others on the panel nod in approval. The Western medicine metaphor also seems to have lightened the mood in the room. Mr. Shan, president of the national planners' association, takes a sip of the tea before adding, "I sense these plans can be taken to any country in the world without changing a word. The European experts may need to think more concretely about policy challenges unique to China." The discussion continues with other panelists sharing their frustration with the lack of "targeted-ness" (*zhendui xing*) of the current project plan. In addition, the panel also brings up the problem of language barriers for the online forum, lack of sustained incentives for users to stay engaged, and insufficient integration of existing resources in the country, among others.

More than a year later, in July 2015, the lead European expert for the delivery of knowledge base and online forum is dismissed from the project team.

Discussions

These episodes offer important empirical evidence for evaluating central tenets of the existing theoretical literature. On the face of it, both the European and the American projects represent major inter-governmental synergies in greening China's urbanization. Both projects seek to engage Chinese state actors through a handful of pilot cities. In other words, there is a common developmental ideal (scientifically planned eco-cities), which is introduced to China through a common set of institutional setups (i.e. pilot cities). The empirical trajectories of these two

projects thus offer important insights to advance our understandings of global environmental governance.

The two projects take on similar structural arrangements. Both relied on a carefully crafted set of quantitative indicators in the planning and implementation phases. Underneath this thin veneer of commonality, however, empirical evidence points to a much more nuanced picture of different routes through which each of the projects unfold.

The European team of experts resort to the use of quantitative indicators to create a ranking of Chinese cities. For development professionals who have had limited prior knowledge of the country, numeric indicators provide a quick and easy way to make sense of a vast nation. In other words, quantitative tools create an image of expertise and knowledge, even when they are in short supply. Indicators provide Mr. Edwards with a shortcut to a developing country he has not had experience with. In this sense, numbers serve as a primary medium through which development professionals transfer their knowledge about a prior nation to a new destination. Moreover, the ease at which numerical indicators can be manipulated also makes it more convenient to re-align the ranking of cities to bits and pieces of newly acquired knowledge about the country, as evidenced by Lejiang's rise to prominence in the ranking.

In the American project, on the other hand, the use of quantitative indicators is driven by an entirely different set of motivations. At a time when the project slows down in making visible progress, and when the momentum for the project starts to wane, indicators are introduced into the project in order to have something to show for. Numbers, in this case, translates the mundane experience of everyday international development into clean and unambiguous signs of progress. Quantitative science enables the charting of trends, the graphing

of growth, and the visualization of change. It gives government officials and development professionals a firm handle through which they can demonstrate "effects" of the bilateral undertaking. More importantly, numeric indicators provide "hard" evidence of progress that preemptively snuffs out opinions to the contrary.

Actors pursue a similar strategy, but for entirely different reasons. In fact, the adoption of quantitative indicators in each case is fully contingent upon the endogenous combination of circumstances and actors, rather than the exogenous influence of a world culture. In this light, some of the strong theoretical assertions about global diffusion needs to be seriously reconsidered.

Evidence further suggests that Chinese cities are increasingly adopting environmental policy instruments, such as the green building code. It remains unclear, however, that the adoption of said policies is a result of world society institutions. There are six Sino-US and ten Sino-EU pilot eco-cities in China now, but the pilot eco-city status is perhaps the only commonality they share. In the American project, pilot cities demonstrate their achievements through "window dressing" of a diverse set of existing projects. These projects, however, have been in the making long before these cities acquire their pilot city statuses. In their action plans, city officials go great lengths to accentuate tiny bits of information that has a tangential American flavor (e.g. a New York-based architect).

The European project, with the online forum, the knowledge base, and capacity building initiatives, clearly aims at fostering exchanges between Chinese and European practitioners, thereby giving rise to a shared set of ideas, beliefs, and cultural predispositions, which may constitute the kind of "institutional effects" (Schofer & Hironaka, 2005) that can lead

to tighter coupling over time. This plan, however, meets with substantial resistance from senior officials in the Chinese state. A universally applicable vision for development is dismissed as irrelevant. Sensible policy-making, according to seasoned bureaucrats, must be predicated upon a wealth of localized knowledge. There is also a deep-seated conviction that policy proposals formulated elsewhere are inherently incompatible with the Chinese society (as shown in the Western medicine metaphor). Any prospect of an institutional cultural change, therefore, is at best ephemeral.

Conclusion: Disengaged Environmentalism in International Development

The world society theory offers, in its final analysis, an optimistic outlook for world development. It envisions the spread of universal values such as human rights, education, and sustainability. The diffusion narrative, which stands at the center of the theoretical premise, describes a process where different parts of the world are gradually integrated into the same value system. In the context of environmental policy-making, the theory underscores a trend of global environmental awakening, where exponentially larger numbers of people and nations join hands in celebrating the "greening of the globe" (Hironaka, 2014).

In a sense, the theory is right on. Chinese state officials, both at the central and local levels, are fond of speaking of their eco-city achievements these days. The American and European projects described in this chapter contribute in no small ways in spreading the idea of eco-cities to China, so do the Sino-Finnish, Sino-UK, and Sino-Germany projects, as well as the China-World Bank, China-Asian Development Bank, and a host of other international development projects in the country. China's experience with international development has undoubtedly led to highly visible shifts in the ways in which the Chinese state describes its

policies, priorities, and prospects. In this sense, politics of the earth seems to have gained traction in China, aligning the country's development with the new global norm of governance.

It is the appearance of alignment that is precisely the problem, however. With more and more Chinese cities pledging their eco-city ambitions, it can seem tempting to suggest that more and more city officials are engaging with environmental objects (e.g. rivers and mountains), processes (e.g. climate change and acid rains), and affairs (e.g. industrial pollution and urban sprawl). That has not happened. The empirical evidence demonstrates that, under the same banner of eco-cities, all kinds of development projects continue in their own orbits. At the same time, even when projects adopt similar formal arrangements, such as the use of quantitative indicators, they serve entirely different ends in their respective projects.

In these senses, the kind of environmentalism in international development is profoundly disengaged. On the one hand, the appearance of institutional isomorphism is disconnected from the unique set of reasons, motivations, and rationales that makes the institution work, under the circumstance of each development project. There is a diffusion of similar institutions, but the diffusion follows decidedly different routes and sequential orders. On the other hand, institutions and outcomes remain emphatically decoupled. The alleged impacts of international environmental governance can hardly be traced to its institutional setup. The ways in which development unfolds in China continue to be infrastructure-oriented, for example, in most cities that are considered eco-city potentials.

Paradoxically, international development helps to engage a new version of environmentalism, that of disengaged environmentalism. It entails a more salient global environmentalist consensus on the one hand, and a less committed environmentalist agenda on

the other. It engages the notion, the formality, and the institutional appearance, but all the while disengages the action, the substance, and the underlying purpose.

The notion of eco-city is inherently broad – open to different interpretations. Likewise, quantitative indicators can be applied broadly – open to use by different actors for different purposes. When international development is founded upon these fuzzy notions and flexible tools, it has the obvious benefits of absorbing conflicts and soliciting agreements, while allowing ample leeway for actors to pursue their own agenda (Brunsson, 1989). They make, in other words, diplomatic sense.

The disengaged environmentalist has a conspicuous lack of attention to the real, tangible, and experiential implications of environmental challenges. The work of disengaged environmentalism is accomplished through the flows of planning documents, leadership remarks, consultant reports, impact studies, and best practice factsheets, not to mention the array of statistics in them. These various instruments of environmental governance allow state officials and development professionals to distance themselves from a deep commitment to the natural environment in actuality. The experience of everyday air pollution is reduced to percentage increases in AQI (Air Quality Index) readings. The massiveness of illegal industrial waste disposal is reduced in a color-coded map. The complex set of interlocking ecological impacts of a dam is reduced to a graphic "progress report." The disengaged environmentalist, in other words, stays far removed from the environmental realities they purport to govern.

Moreover, disengaged environmentalism is a specter that haunts international development. When intimate local knowledge is hard to come by, when political stakes are high to make internationally visible achievements, when stakeholders are too many and their interests

too varied, and when urban environmental challenges are inherently multi-faceted, disengaged environmentalism becomes the default option. It represents the "least common multiple" for international environmental governance. In this sense, the spread of disengaged environmentalism on a global scale is nearly effortless. Nations are quick to jump onto the environmental bandwagon, but the earthly environment has been left far behind.

The findings about disengaged environmentalism have major implications for the academic literature on international environmental governance and world society. Following the recent line of empirical work on the interactive and negotiated process of diffusion (Halliday & Carruthers, 2007 & 2009; Chorev, 2012; Zinda, 2014), this finding uncovers insufficiencies in the world society theory's core propositions regarding institutional isomorphism. While the spread of environmental values and institutions is a defining feature of our time, the process of diffusion is much less straightforward than previous conceived. This chapter helps articulate the contingent nature of institutional isomorphism, but future work is still needed to better understand the various sets of local conditions that make possible spread of global institutions.

Furthermore, although the gap between institutions and outcomes has long been recognized, recent scholarly work suggests hope that the two may be more closely connected as a result of "institutional effects" (Schofer & Hironaka, 2005; Schofer et al., 2012; Thomas, 2016). Empirical evidence in this chapter does not support this hopeful outlook. In fact, it appears that international and diplomatic formalities of development will continue to remain thoroughly disconnected from on-the-ground experience of environmental interventions. Indeed, findings support some of the early work in the world society tradition that conceptualizes decoupling as a normal state of affairs (Meyer & Rowan, 1977; Brunsson, 1989). In this light, a potentially

fruitful line for future inquiry is to better understand the rhetorical devices that actors deploy to minimize the perception of decoupling. When environmentalism takes on a disengaged structure in international development, how do actors continue to make sense of the work they do, both individually and organizationally? An understanding of the framing of decoupling will contribute major insights into the work of world society.

Taken together, disengaged environmentalism reflects a broader challenge for environmental ethics of our time. The global scale of today's environmental challenges makes it more difficult than ever for the individual actor to discern the environmental consequence of personal action (Norgaard, 2011; Jamieson, 2014; Kolbert, 2015). As studies of the agro-food system (Pollan, 2006), of consumption (Schor, 2010), and of leisure (Urry, 2007) have all shown, humanity is more disconnected from nature than ever. Actors in the enterprise of transnational environmental governance are, of course, no exception to this disconnect. In fact, the level of disengagement is perhaps the most extreme for transnational actors, given the scale of interventions they partake in. An understanding of disengaged environmentalism in international development thus offers a unique opportunity to examine earthly sensibilities of our time.

Chapter 5. Conclusion

When I started pre-dissertation fieldwork in the summer of 2011, I was motivated by a desire to understand the process of environmental policy-making in China. At the beginning, I did not know where to start. Even if I did, I had no clue what questions I should ask. Now, five years later, I am still trying to understand the same issue, but have a little better idea about the kind of questions that can take me to a better answer. In this concluding chapter, I provide a focused treatment of these questions, and how they relate together.

"Environmental governance" has grown into somewhat of a fashionable term over these years. When people use "governance" instead of the more conventional terms of government, state, or nation, it often suggests an understanding of public policy-making as a process bigger than the government itself (Rhodes, 1997). It implies, on the one hand, the emergence of new actors in shaping environmental policy outcomes, and on the other hand, the reconfiguration of the government to accommodate, incorporate, and occasionally institutionalize these new actors into the political process (Lemos & Agrawal, 2006). As if the term "governance" alone is not different enough to insinuate this trend, scholars have deployed a slew of new terms in recent years, such as networked governance (Brownill & Carpenter, 2009), multilevel governance (Bulkeley & Betsill, 2013), and hybrid governance (Fisher & Svendsen, 2014).

The general consensus, however, is clear – an increasingly diverse set of players partake in the business of environmental governance. This includes the non-governmental sector, international development agencies, the United Nations and its affiliates, scientists, media, private corporations, industry associations, political interest groups, activist organizations, and of course the government itself. During the last decade, a significant amount of scholarly writing has been produced on these actors in environmental governance. Even review articles alone can easily fill an entire line of references (Lemos & Agrawal, 2006; Biermann & Pattberg, 2008; Brondizio, Ostrom, & Young, 2009; O'Neill et al., 2013). This literature can often give the reader an impression that environmental governance has grown into a highly diffuse project – one that is stateless, centerless, and boundless.

This was precisely how I felt five years ago. I also felt empowered by this post-modern imagination of environmental governance, where "all that is solid melts into air" (Berman, 1983). I felt empowered because, quite frankly, everything appeared to count. But I also felt disoriented because I did not know what *really* counted.

As an ethnography, I try to understand the people I study. Let me strike that out. I try to think like the people I study. I immerse myself in the ensemble of social relations of the Chinese officials I seek to understand. I join the meetings they go, read the papers they do, go on the trips they take, and sit in the "thought education" sessions they attend. I situate myself in the relational complexities that Chinese officials take for granted as their quotidian experience. My job, in other words, is to understand, from their perspectives, what really counts.

Every day, Chinese officials are presented with an overwhelming amount of information. Memos, reports, directives, motions, invitations, and the like can quickly form a

pile on their desk, not the mention the endless incoming emails, phone calls, and door knocks. The bureaucratic process, therefore, is first and foremost about information processing. It is, at its core, a process that enables the bureaucrat to identify the "right" amount of information every time a decision is called for. The bureaucratic process serves as a cognitive filter for the bureaucracy as a whole without entering into the cognition of any single bureaucrat. It solidifies in the form of daily routines, formalities, or even rules, though much of it remains tacit and unspoken.

This brings us back to the discussion of environmental governance. As more actors enter into the field, there is no doubt that it becomes more crowded than before. This does not mean, however, that all actors share the weight in influencing environmental policy outcomes. A better understanding of environmental governance as a bureaucratic process, therefore entails understandings of, on the one hand, the institutional mechanisms that enable the bureaucrat to impose a priority structure on all the inputs that the bureaucracy encounters, and on the other hand, the substantive outputs of said priority structure (or, what really counts). The "networked," "multilevel," and "hybrid" organization of environmental governance does not necessarily render environmental governance more complicated, but does necessitate a more robust bureaucratic process as an informational gatekeeping mechanism for the bureaucratic decision-maker. Environmental governance, seen in this light, is as much the empirical object itself, as it is a way of identifying the empirical object in the first place.

Furthermore, my ethnographic inquiry makes it clear that even when indicators are widely used on different occasions in Chinese environmental governance, each instance can have its own set of motivations and purposes. Each can also have distinct consequences. When

the bureaucratic process relies on quantification for environmental governance, the extent of the governable environment is determined by the extent of ecological qualities that are quantifiable. In other words, the organization of the bureaucracies interacts with the ecology of landscapes to shape environmental governance. In international environmental development, the use of indicators is also dictated by the circumstances of each project.

To understand environmental governance in China is to appreciate that, as a bureaucratic process, it is jointly shaped by historical, national, and international factors. So far as evidence goes in these chapters, the three factors explain a large part of the observed outcome. I do not suggest that I have exhausted all possible explanations. As a bureaucratic process, it is necessarily open-ended. Future development can, and probably will, render certain factors less central, and introduce new pivots into the process. In this sense, this concluding chapter is rather inconclusive, in that several other factors appear highly promising, but remain unattended to in this dissertation. First, building on the findings reported in Chapter 4 about international development, my future work will more closely examine the role of professionals and the extent to which the technocratic organization of the state can shape environmental governance. International development is driven by particular forms of expertise that are endorsed by state power (Easterly, 2013). The intersection of state authority and technical expertise will likely be a fruitful angle for future research. Second, as I argue in Chapter 3, the use of indicators has helped the Chinese state to earn trust from the public. With increasing public discontent with pollution, as well as increasingly public display of such discontent, it remains to be seen when the state will have to face serious challenges to its existing patterns of policy-making. My future work, therefore, will also examine the growing voice of civil society in China's environmental governance. Third, this dissertation largely shies away from discussing the issue of inter-city

competitions within China. This neglect is, in part, due to the lack of empirical data from my own fieldwork. Future research will benefit from a closer examination of how local state actors innovate in environmental policy-making, particularly when they compete with other cities.

Finally, the general implications of the current project need to be evaluated. The specific findings reported in this dissertation are, without doubt, unique to environmental policy-making in contemporary China. None of the findings can be immediately generalized to other contexts. If we consider generalizability and representativeness in the statistical sense, the ethnographic and historical data hardly make any general sense beyond the specific circumstances under which I report them. In other words, the empirical discussion is not even generalizable to the overall state of Chinese environmental governance – certainly not if we mean the word in the statistical sense. In fact, categorical generalization from qualitative data has long been declared a mission impossible (Schofield, 2002).

With regard to the focus of the current dissertation, it is no secret that sustainability indicators are also widely used in other local and national contexts (Bell & Morse, 2008). It would be a mistake, however, to suggest that, because China also uses indicators, its environmental governance is similar to that elsewhere. The fact that indicators are used both in China and the United States, for example, does not mean indicators have the same sociological significance in both countries. My historical inquiry demonstrates that the Chinese party-state's use of quantitative indicators is the result of a complex set of historical factors. The maturation of the command-and-control political system in China is a peculiar historical development that sits on the confluence of different historical forces. During formative years of the Chinese communist party-state, leaders and intellectuals all struggled with the complex set of political,

ideological, and institutional baggage they carried with them. The use of indicators by Chinese state actors can only be fully understood when situated against such historical backdrop. Indicators are a living reincarnation of the planned economy. The same cannot be said about the United States.

At the same time, it would unfair to suggest that this dissertation has no significance beyond China. The theoretical generalizability of the evidence is of pivotal interest. The work of authoritarian environmentalism, which I discuss in Chapter 3, manifests in its purest form in contemporary China, because the Chinese state exempts itself from even the thinnest pretense of democracy or post-colonial independence. It is, by design, far removed from the society it governs. The use of indicators, therefore, provides the most ideal means to shield officials from public scrutiny. Numeric representations preemptively exclude civil society from entering into the political process in the first place, not to mention political deliberation. When quantitative indicators are used in more democratic contexts, they often complement, or are complemented by, other mechanisms such as surveys and town halls (Bell & Morse, 2008). Therefore, findings reported in this dissertation may represent an extreme form of empirical reality, but the extremity of which shall be assessed through future comparative empirical inquires on the subject matter. I would further argue that, through the extreme case of China, we gain a more thorough understanding of contemporary environmental challenges in the political system. In this sense, the extreme case contributes significantly to theory-building. With a full understanding of what authoritarian environmentalism is capable of achieving (and of not achieving), we can begin to critically interrogate "actually existing unsustainability" (Barry, 2012). Understanding unsustainability is, after all, a first step toward imagining sustainability in the real world.

Notes

[1] To be sure, not all political interventions in nature are pro-environmental. There are notable historical moments where state interventions left devastating impacts on the ecological landscape. Cases such as the fallout of Chernobyl (Peterson, 1993) and Mao's massive campaign to conquer Nature (Shapiro, 2001) are but a small sample. These events have become part of the collective memory of a nation, if not of all humanity. Much of today's environmental awareness is at least in part based on knowledge of past failures (Kollmuss & Agyeman, 2002). More importantly, many of today's environmental protection laws and regulations were established to prevent such histories from repeating themselves. The modern Leviathan, after all, cannot afford to ignore environmental risks (Beck, 1992). In this sense, the current dissertation is certainly not a revisionist attempt to sweep aside environmentally destructive moments in our history. It recognizes that the tide of history has turned decidedly towards the environment. The sociological task is to explain the turn.

[2] Stalin articulated the Law of Balanced Development in his 1952 pamphlet, *Economic Problems of Socialism in the U.S.S.R.* Stalin intended to advocate for this Law as a socialist alternative to the notions of competition and production under capitalism. He argued that capitalist societies were shackled by the profit-driven processes of production and competition, the conditions of which were no longer operative under socialism. Resultantly, the Law of Balanced Development emerged as the basic economic law of socialism. Stalin occasionally referred to it as the Law of Balanced (Proportionate) Development, using the parenthesis to underscore the role of state planning under socialism (Stalin, 1952). When Beijing published the Chinese translation of the text a few months later, the term appeared as the "Law of Planned and Proportionate Development," or *Youjihua Anbili Fazhan Guilv*. The Chinese translation, or indeed innovation, quickly caught on in China, and became a key terminology that shaped the Chinese political and public discourse of the time.

[3] In Mandarin, the phrase "*zhibiao tixi*" (phonetics: juh-bee-ow tee-she) is often used to refer to indicators. The term may be literally translated into "matrices of indicators," but this translation does not do justice to the full range of meanings of "*zhibiao tixi*." This phrase consists of three elements – "*zhi*" meaning index or indicator, "*biao*" meaning target, and "*tixi*" meaning system or matrix. In this light, when the notion of "*zhibiao tixi*" appears in Chinese academic or official literatures, it refers to, on the one hand, quantitative indicators which measure an object and set a target to be accomplished by a future time point. On the other hand, it suggests a matrix of indicators that constitute a unified system. Thus, "*zhibiao tixi*" means a number of things all at once – quantitative descriptions of reality, binding targets that hold officials accountable, and multiple indicators that constitute a unified matrix. In this dissertation, I use indicators, measures, indices, and matrices interchangeably, but they all carry the same set of connotations stated above.

[4] The notion of "top design" (*dingceng sheji*) is popular among Chinese officials. It is the contemporary equivalent of the Marxian notion of "superstructure," which encompasses political ideology, philosophy, law, and art. In contemporary Chinese political parlance, "top design" may refer to state structure, state-society relations, political culture, or other macro-structural issues of state power.

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