State Capacity, Policy Learning, and Policy Paradigm Shift: Institutionalization of the Theory of Scientific Development in China

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Abstract: In late 2003, the "theory of scientific development" (*kexue fazhanguan*) was espoused by the fourth generation of Chinese Communist leadership, led by Hu Jintao. It calls for people-centered development and promotes harmonic development of the economy, society, and human beings. Its effective implementation is considered crucial for achieving sustainable growth and building a moderately prosperous society. Viewing the theory of scientific development as a new policy paradigm advocated by the central policy elites, this article explores the capacity of the Chinese state to institutionalize the shift from the well-entrenched paradigm of all-out development (GDPism) to a new paradigm based on a balance between economic growth, social development, and environmental protection. It argues that while the formulation of the new policy paradigm demonstrates the relatively high capacity of Chinese central policy elites for policy learning, its institutionalization has been a complex and protracted process due to the weakness of societal actors in the policy subsystem, which has resulted mainly from the existing central-local politics, and underdeveloped civil society, and weak links between the state and society in China.

Keywords: scientific development, policy paradigm, policy learning, state capacity, all-out development, GDPism

INTRODUCTION

Rapid and stable economic growth in the past 30 years has greatly improved the living standards of over one billion people in China and enhanced the overall capacity

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of the Chinese nation. However, the single-minded pursuit of economic growth (GDPism) by the government at all levels has had adverse developmental effects. It has led to a serious imbalance among economic growth, environmental protection, and social equality. These multiple socioeconomic challenges have raised serious concerns about the effective governance of the Chinese state among social scientists both at home and overseas. As a result, academic literature on state building and state capacity in China has increased since the mid-1990s. More and more scholarly attention has been paid to the central-local relationship and to the capacity for fiscal extraction and policymaking of the central government in China. A general conclusion is that the economic reform and open-door policy have decreased the state's capacity in contemporary China (Walder 1995; Yang 1996; Wang and Hu 2001).

China's leaders have not stopped their efforts to improve their governing capacity. Since the mid-1990s, the Chinese state has enhanced its fiscal prowess, boosted its regulatory institutions, and strengthened its overall governing ability (Yang 2003; 2004). A variety of social policies have been launched to address imbalances in the economy and society (Yang 2006; Wang 2008). However, no great policy change resulted until the outbreak of SARS (severe acute respiratory syndrome) in early 2003. After that crisis, in order to achieve a balance between economic growth and social development, the newly established Chinese political leadership led by Hu Jintao sought to redefine the concept of development in China. As a result, the "theory of scientific development" (*kexue fazhanguan*) was formulated in late 2003. This new approach calls for a "people-centered development, which is comprehensive, coordinated, and sustainable, for the promotion of overall harmonic development of economy, society, and human beings" (CCCCP 2003). In the official discourse, this new theory has been hailed as the latest development of Marxism, in pace with the times, and its effective implementation is considered crucial for solving all the social problems that have accumulated in China.

Some may find concepts like "scientific development" and "people centeredness" tiresome ideological buzzwords, but they convey important policy implications and even signal new strategic policy orientations. Making use of the concept of policy paradigm, this article sees the formulation of the theory of scientific development and its institutionalization as a good case in point to examine the capacity of the Chinese state, and argues that the theory of scientific development indicates the emergence of a new direction in China's development path (Gallagher 2005), even a new policy paradigm in China under the reforms of the early 21st century. It not only reflects the efforts made by the Hu-Wen leadership to modify and redefine the development strategy launched by the late paramount leader Deng Xiaoping and continued by the post-Tiananmen leadership, but also demonstrates the policy learning capacity of the cen-

tral policy elites (Wang 2009).

With the announcement of the theory of scientific development, the central policy elites in China have started to revisit the policy problems facing the country, reset policy goals, experiment with new policy instruments, and even practice a new policy-making style. To a large extent, a new policy paradigm has formed and begun to take hold in China. From the perspective of policy learning, this article aims to examine the capacity of the Chinese state to advocate for and institutionalize this new policy paradigm. It argues that while the formulation of the new policy paradigm demonstrates the relatively high capacity of the Chinese central policy elites for policy learning, its institutionalization is a complex and protracted process due to the weakness of societal actors in policy subsystems, which has resulted mainly from the existing central-local politics, underdeveloped civil society, and weak links between the state and society in China.

CONCEPTUAL FRAMEWORK

Originally developed by Thomas Kuhn to describe long-term conceptual frameworks in the natural sciences (Kuhn 1970), the notion of paradigm has been widely applied in the social sciences in general and in policy sciences in particular. In his study of the learning process in public policy-making, Peter Hall introduced the concept of *policy paradigm* to refer to "a framework of ideas and standards that specifies not only the goals of policy and kind of instruments that can be used to attain them, but also the very nature of the problems they are meant to be addressing" (Hall 1993, 278). As an intellectual framework embedded in the minds of policymakers, a policy paradigm governs not only the goals of policy and the choice of instruments and settings to achieve these goals, but also policymakers' perceptions of the very problems they are meant to be addressing (Oliver and Pembeton 2003). In other words, a policy paradigm represents a framework for policy action, and it can be identified in terms of how policymakers set policy goals, choose policy instruments, and define policy problems.

A policy paradigm is a powerful force for maintaining policy stability. However, a once stable paradigm might begin to weaken if it ceased adequately to provide solutions for problems. This can lead to a shift of paradigm. Kuhn defined a paradigm shift as a new conceptual tradition, a radical change in interpretation, whereby science takes a wholly new and changed perspective toward an area of knowledge and activity (Kuhn 1970). Paradigm shift is initiated by events that prove anomalous within the terms of the prevailing paradigm. As such anomalies accumulate, policymakers alter instrument settings and experiment with new policy instruments as they try to correct

the problem. If these efforts fail, policy failures occur, which discredit the old paradigm and lead to a wide-ranging search for alternatives and to experimentation with policy modifications (Oliver and Pembeton 2003).

However, when paradigm shifts do occur, this does not mean that everything changes, as the influence of a new policy paradigm is not automatic. In essence, the paradigm shift is a wider contest between competing paradigms. Such a contest "will end only when the supporters of a new paradigm secure positions of authority over policymaking and are able to rearrange the organization and standard operating procedures of the policy process so as to institutionalize the new paradigm" (Hall 1992, 281). In other words, the institutionalization of new policy paradigms is a complex process that requires successfully linking ideas to actors in the policy process and overcoming the resistance of established actors to new ideas (Drezner 2000). That is to say, a policy paradigm shift does not take place primarily within the confines of the state itself. It involves a wide range of actors, including national, state, and regional governments, localities, corporations, NGOs, and social movements. In this sense, the process of paradigm shift is also a process of policy learning, especially a process of social learning (Drezner 2000).

The view of policy learning emphasizes the capacity of the state to act automatically based on societal pressure (Hall 1993, 278). State capacity is defined as a measure of the state's ability to mobilize social and economic support and consent for the achievement of public goals (Painter and Pierre 2005). In the field of public policy, state capacity can be understood as the ability of states to make and implement effective policies. Such a capacity is a significant determinant of a state's success in performing policy functions, which can be measured not only by success in making and implementing specific policies or deciding policy directions, but also by success in advocating and institutionalizing new policy ideas or policy paradigms.

State capacity itself can be categorized in two broad dimensions: an intrinsic component, namely, the state's cohesiveness as a strategic actor that can formulate and implement policy in a coherent fashion; and an extrinsic component, which is the state's ability to extract performance from private firms—setting standards, monitoring performance, and influencing the direction of investment—in exchange for subsidies (Chibber 2003). Hall (1986) identified three sets of variables that shape state capacity: the structure of the state, state-society relations, and the structure of society. A primary focus on state structures draws attention to factors such as insulation, autonomy, coherence, and unity. A basic test of a strong state is whether it can impose its will on society by deploying coercive powers, strategies, and techniques.

From a learning perspective, state capacity—especially state administrative capacity—is one of two variables affecting policy learning. The other variable is the nature

of the policy subsystem, especially whether and to what extent links exist between its state and societal members. Figure 1 shows the relationship among state capacity, policy subsystem, and policy learning.

Figure 1. State Capacity, Policy Subsystem, and Policy Learning (Adapted from Howlett and Ramesh 2003, 224)

		Dominant actors in policy subsystem	
		Societal actors	State actors
State capacity	High	Social learning	Instrumental learning (Lesson drawing)
	Low	Nonlearning	Limited learning

In this model, a state must have high administrative capacity for any true learning to take place. For social learning, a high level of state capacity should be accompanied by a policy subsystem dominated by societal actors. Consisting of both state actors and societal actors, a policy subsystem is a space in which relevant actors discuss policy issues and persuade and bargain in pursuit of their interests (Howlett and Ramesh 2003). Policy subsystems have specific properties and structural characteristics that affect the types of policy goals they espouse and the kinds of instruments feasible or acceptable for putting their policy ideas into practice. Four forms of policy learning can be differentiated from the model: social learning, instrumental learning, nonlearning and limited learning. Social learning is a type of exogenous learning, which originates outside the policy process and affects the constraints or capacities of policy-makers to alter or change society. According to Hall, social learning is the most fundamental type of learning and is accompanied by changes in the thinking underlying a policy—that is, a shift of the policy paradigm (Hall 1993).

Though the conceptual framework discussed above was developed in the western democracies, it has revealed the relationship between government and society and between policy learning and policy change in public policy process in modern societies. Although it is hard to say China is a democratic regime, its policy process has become more complex and sophisticated in the context of transition to a market economy (Tanner 1999; Wang 2006; Heilmann 2008), as the government is under increasing outside pressure from interest groups and social actors. So it is reasonable to employ such a conceptual framework to China.

Within this conceptual framework, this article argues first that the theory of scientific development is a departure from the more single-mindedly pro-development paradigm that dominated in post-Mao China, especially in the 1990s, and demonstrates the ability of the Hu-Wen leadership to draw lessons from experience. It further argues

that theory of scientific development represents a paradigm shift in Chinese policy because it entails a set of new policy ideas that will shape the broad goals that the top Chinese policy-makers pursue, the way they perceive public problems, and the kinds of solutions they consider for adoption in the foreseeable future. Seeing the policy paradigm shift as a process of social learning, a successful shift to the theory of scientific development depends not only on the capacity of the Hu-Wen leadership "to initiate a wider contest between competing paradigms" (Hall 1993, 280) and "to rearrange the organization and standard operating procedures of the policy process" (Hall 1993, 281) to institutionalize the new paradigm, but also on the role played by societal actors in policy subsystems. However, due to the rising power of local government and the growing business sector in the context of decentralization and marketization, as well as the underdevelopment of civil society in China, it is not surprising that the implementation of the theory of scientific development nationwide has encountered strong resistance from supporters of the old policy paradigm.

EMERGENCE OF A NEW POLICY PARADIGM

Given the economic backwardness and poor economic performance of the state sector in Mao's era, the post-Mao leadership, led by Deng Xiaoping, shifted their focus on economic growth in 1978 when the reform and open-door policy was launched. Emphasis on economic growth signaled a policy paradigm shift from the "class struggle" paradigm of Mao's China. As the Chinese government at all levels in the post-Mao era was preoccupied with economic growth and expanding the role of the market, the so-called "all-out economic growth" policy paradigm was developed and institutionalized in China, especially in the 1990s.

Many factors contributed to the institutionalization of such a policy paradigm. First of all, the economic backwardness and the economy of shortage left by the Maoist era made the post-Mao leadership, with Deng Xiaoping at the core, realize that socialist China could not survive without rapid economic growth. Second, the public felt dissatisfied with the poor living standards and the tiresome ideological indoctrination and class struggle. Third, the legitimacy crisis in post-Mao China forced the Chinese leadership to rely on a high level of growth in GDP (gross domestic product) as its most important source of legitimacy. Such an orientation became more obvious after the Tiananmen Incident in 1989 and the collapse of Communist regimes in the Soviet Union and Eastern Europe in the early 1990s. After that, economic development measured by the GDP growth rate became the paramount policy goal of Chinese governments at all levels.

Given the absence of market transparency and the monopoly of political power,

Chinese political and economic elites, mainly party-state officials and their dependents, have benefited greatly from that policy paradigm as they have been able to use all kinds of development programs to make personal gains and legitimize their rule. The worldwide dominance of market-driven neoliberal thinking in the 1990s also contributed to the institutionalization of the all-out development paradigm (also called GDPism) in China.

Within this policy paradigm, economic backwardness and shortages of necessities were defined as the fundamental policy problem in China that challenged the legitimacy of the party-state. A new set of market-based policy instruments were used to boost economic growth, such as the creation of markets, privatization of state enterprises, downsizing of the state sector, deregulation of market controls, liberalization of trade and foreign investment, and withdrawal of welfare subsidies.

In the era of Jiang Zemin, GDP was accepted as the principal indicator of economic progress, sign of well-being, yardstick of success, measure of local leaders' performance, and basis of policy debate. Although China achieved significant increases in GDP from 1978 to 2003, China paid a steep price for its economic miracle as many inappropriate development policies and strategies were launched to boost GDP nationwide. China used a vastly disproportionate share of the world's coal, steel, and other resources. In addition, a disastrous level of pollution has put China at risk. In paradigm-shift terminology, the all-out development/GDPism paradigm had accumulated many anomalies in China, such as income inequality, social erosion, environmental degradation, and ecological crisis.

From the late 1990s onward, although China maintained economic prosperity, its society was on the brink of great crisis because civil discontent was growing quickly (Wang, Hu, and Ding 2002; Eckholm 2001). More and more news reports, journal articles, and books, as well as internal reports and documents in China, expressed concern about the increasing negative consequences of the GDP-growth-at-any-cost mode of development. To alleviate the anomalies and maintain social and political stability, some policy adjustments were made. The government introduced a social security policy of setting minimum prices for agricultural commodities and purchasing grain that failed to sell in the market at its minimum price. A new scheme, tax for fee, was introduced in rural China, aimed at abolishing all taxes levied by township and village councils and replacing them with a national tax not to exceed than 5 percent of household income. More money was invested in the national scheme for a minimum income guarantee, a public income maintenance system for laid-off workers and urban poor people (Wong and Ngok 2006). In order to narrow regional disparities, the strategic policy of Open up the West (*xibu da kaifa*) was implemented in 2000 (Goodman, 2004). Nevertheless, worsening development conditions resulting from the all-out-

development paradigm in China had been accumulating. Finally, the outbreak of the SARS epidemic in 2003, an unprecedented public crisis, revealed the deep problems China had inherited from its all-out-development paradigm.

In this sense, the outbreak of SARS functioned as a triggering event to initiate policy change. The lessons from the SARS crisis made the newly established leaders Hu Jintao and Wen Jiabao realize that China's relatively wasteful, investment-led, high-cost, and polluting method of economic growth must be changed. On June 17, 2003, Premier Wen put forth for the first time the idea of "comprehensive, coordinated, and sustainable development" at a national symposium on public health. On July 28, at the National Meeting on Fighting SARS, President Hu called for a new outlook on development aimed at making it coordinated, integrated, and sustainable. On October 1, when he delivered a speech at the National Day reception, Premier Wen said:

> The most important revelation of the campaign of anti-SARS for us is that we must persist in the principle of balance and coordination, and maintain the coordinated development between economy and society, between cities and villages, and among regions; must persist in the principle of people-centeredness, and increase the living standards of both materials and culture and the health standard of the people; must persist in the harmony between human being and nature, and achieve sustainable development; must persist in reform and innovation, and push the common progress of socialist material civilization, political civilization and spiritual civilization. (quoted in Hu and Jin 2004)

In October 2003, at the Third Plenary Session of the 16th Central Committee of the Chinese Communist Party (CCP), the Chinese leadership formally formulated the theory of scientific development. Its basic contents were encapsulated in the "five coordinations" principle, which aims to attain more balanced development between cities and villages, among different regions, between economic growth and social benefits, between human beings and nature; and between domestic growth and the open-door policy.

In his report to the 17th Party Congress of the CCP, held in October 2007, Party General Secretary Hu Jintao gave a sophisticated explanation of the essential aspects of the theory of scientific development. He pointed out that it is based on the realization that the past three decades of rapid economic growth in China were largely driven by expansion in investment at relatively low technical levels and at high costs, especially in terms of resource use and damage to the environment. According to Hu, the essence of the theory of scientific development is economic growth. The first aspect of scientific development is people-centeredness (*yiren weiben*), meaning that instead of pursuing growth for growth's sake, development should aim to benefit people. The sec-

ond aspect is "comprehensive, coordinated, and sustainable [*quanmian, xietiao, kechixu*] development," meaning the various dimensions of development (economic, political, cultural, and social) need to be pursued in a coordinated way, with environmental protection a priority. The third aspect is balanced development, with the aim of reducing inequalities between cities and villages, among regions, between economic and social development, between humans and nature, between domestic development and opening up to the outside world, and between the central and the local (Hu 2007).

Although the theory of scientific development has a strong ideological flavor in its official usage, it cannot be seen just as official rhetoric or an ideological package. It can be conceived of roughly as a Chinese version of sustainable development (Gallagher 2005). In terms of policy science, it indicates the emergence of a new policy paradigm in China, scientific development, which has also been called people-centered development (Ngok 2009). The old and new paradigms are compared in table 1.

Table 1. Two Policy Paradigms: All-out Development and Scientific Development

Paradigm	All-out development	Scientific development
Problem definition	An economy of shortage has eroded party-state legitimacy.	Social inequality leads to social conflict.
Policy goal	Goods-centered: • Overcoming economic backwardness • Improving economic performance in terms of greater efficiency, growth, and competitiveness • Speeding up economic growth • Increasing GDP	People-centered: • Striking a balance between economic growth, environmental protection, and social equality • Maintaining economic growth without ignoring social equity • Building a harmonious and environment-friendly society
Policy orientation	Market orientation: • Downsizing public sector • Developing private economy • Deregulating market controls • Liberalizing trade and foreign investment • Separating government and enterprises	Mix of state, market, and civil society orientation: • Enhancing partnerships among state, market, and civil society actors • Providing more benefits to underprivileged social groups • Shifting from economic policy to social policy
Policy instrument	Market-driven instruments: • Decentralization • Privatization • Deregulation • Liberalization • Marketization	Mixed instruments: • Regulatory state • Citizen participation • Consensus building • Responsive governance

Policy-making style	State-structural: • The state as the main actor in socioeconomic development • Increasing role of economic elites in policymaking • Heavy involvement of experts, especially economic experts	State-society partnership: • More participation by the public • Combination of science and democracy • Transparency and accountability • A continuously learning Politburo
Policy language	Yellow language: • Wealth for a few people first • Wealth as a glorious goal • Total GDP and per capita GDP • Rapid and sound development	Green language: • Common prosperity • Energy-saving society • Environment-friendly society • Sustainable development • Social justice and equity • Sound and rapid development • Partnership, fraternity, and harmony

In reviewing the emergence of the theory of scientific development, we can see that it fits the definition of paradigm shift. The widening income inequality among social groups, the rural-urban gap, regional disparity, urban poverty, and ecological degradation were threatening to the all-out-development/GDPism policy paradigm—anomalies in the Kuhnian sense. The SARS crisis intensified all these problems. The leadership transition and the formation of the Hu-Wen leadership were key components of the shift. The locus of authority over policymaking shifted toward the Hu-Wen leadership after the policy failure in the early stage of the anti-SARS campaign. The SARS crisis made the Hu-Wen leadership realize that overemphasis on the GDP often conceals, justifies, and even worsens inequality between income groups and between regions. Although policy paradigms did not become the object of open political contestation in the undemocratic political context in China, the outcome of the political "black box" process reflects the shift in policy paradigm, which we can see from the policy documents and policy implementation of the Chinese authorities from 2003 onwards, which will be examined later.

INSTITUTIONALIZATION OF THE SCIENTIFIC DEVELOPMENT PARADIGM

Under the Hu-Wen leadership, scientific development rapidly began to function as a new policy paradigm in China. Many policy problems begin to be redefined from the perspective of social equity or social harmony instead of economic growth.

Although economic growth is still regarded as the most important policy goal, much weight is given to social development and environmental protection; this change could be seen in the official policy rhetoric since 2003. People's well-being rather than material wealth is seen as the basis of policy choice. In terms of policy orientation, the well-being of the people, especially socially disadvantaged groups, has drawn much attention from policymakers. In choosing policy instruments, the government has given more weight to the role of civil society and business. A bottom-up perspective and public participation are emphasized in the policymaking process. Even the Politburo of the CCP, the top policymaking body in China, is engaged in regular learning so as to gain more policy-related knowledge from academia and improve the quality of public policy. All these indicate that the scientific development paradigm has become the framework for the policy actions taken by the Hu-Wen leadership. Specific steps taken include the following.

First of all, the theory of scientific development has been written into the important documents of the party and the state, including the state constitution. The new policy paradigm found its place first on the middle term of the national development strategy, that is, the 11th Five-Year Plan for National Economic and Social Development (2006-2010), which was first endorsed by the CCP central plenum in November 2005 and by the National People's Congress, China's legislature, in March 2006. Unlike the previous five-year plans, which focused solely on economic growth, the 11th Five-Year Plan placed the top priority on social development and people's livelihoods, and aims to achieve balanced and sustainable development. Social justice and people's well-being are given the same attention as economic growth. The new plan calls for building up a harmonious, energy-saving, and environment-friendly society. Then, in October 2007, scientific development became the core theme of Hu Jintao's political report to the 17th Party Congress of the CCP and was enshrined in the party constitution, which means it became one of the core guiding principles for the Communist Party as well as China in general.

Second, the theory of scientific development has been incorporated in the policy sectors of social development, environmental protection, and labor protection since 2004, and more public money has been allocated to public education, health care, and housing. Mining, high-polluting, high-energy-using and non-high-tech industries are subject to increased tax rates. Stricter environmental standards have been applied to enterprises to reduce energy use and pollution. Labor rights and interests have better protection under the Labor Contract Law, which became effective on January 1, 2008.

Nevertheless, given the deep entrenchment of the old paradigm of development and the diversified interests and multiple tiers in the Chinese governing structure, change from the old GDPism paradigm to scientific development has not been auto-

matic. The successful institutionalization of the new paradigm necessitates nationwide social policy learning. Given the increasing number of policy actors and the complexity of the policy subsystem in contemporary China as the result of decentralization and marketization (Wang 2006; Heilmann 2008), it is not easy for all the policy actors, especially those at subnational levels and in the business sector, to fully accept the new paradigm under the existing patterns of central-local relations and state-society relations. In fact, the developments in China after the promulgation of the theory of scientific development show that it has not been totally accepted by all policy actors. Many key policymakers at the regional and local levels are still obsessed with GDPism. Actors in the business sector have not paid much attention to changing the low-tech, high-cost mode of growth. The policy domain of environmental protection can serve as an example to illustrate competition between the old and new paradigms.

ENVIRONMENTAL PROTECTION AS AN EXAMPLE OF PARADIGM SHIFT

Worsening environmental degradation was one of the key elements contributing to the formulation of the theory of scientific development. The central policymakers have realized the political and social dangers of pollution and therefore sought to become more energy-efficient and quickly improve environmental protection to achieve sustainable growth. For this purpose, the 11th Five-Year Plan calls for a 20 percent reduction in energy consumption per unit of gross domestic product. That means a 4 percent reduction every year.

Within the scientific development paradigm, the central state has set up a more definite policy framework for environmental improvement. The problem of the environment has been redefined, new policy goals have been set, and new policy instruments have been chosen. These changes could be identified in the "three shifts" in environmental policy put forward by Premier Wen at the National Environmental Protection Conference in April 2006: (1) shifting from giving more weight to economic growth over environmental protection to paying equal attention to both goals; (2) abandoning the development model of "polluting first and then redressing problems later"; and (3) shifting from total reliance on administrative measures to a mix of legal, economic, technological, and administrative measures (Wen 2006). These policy shifts reflect the efforts of the central government to institutionalize the scientific development paradigm in the environmental policy sector.

In order to ensure the effective implementation of these policy shifts, a set of policy instruments have been employed, including administrative, market, fiscal, institution-

al, and legal tools. Administrative measures have been taken to shut down highly polluting small thermal power plants and inefficient iron foundries and steel mills. Market forces and taxation have been used to save energy and cut pollution in other industries such as cement and aluminum. In January 2007, for instance, a report from the State Environmental Protection Agency (SEPA) disclosed that 82 projects had been halted for environmental reasons, including several involving the main power companies (Xinhua News Agency 2007). In order to tighten policy implementation, local officials' evaluation process now includes assessment of their environmental work. That means pollution reduction has been made a concrete task for governors and mayors.

In another institutional innovation, SEPA has set up five regional environmental protection supervision centers. While these centers come under the direct leadership of SEPA and are independent of local governments, they cooperate with local environmental protection agencies in implementing relevant laws and regulations. The first such center, the Southwest Environmental Protection Supervision Center, was set up in December 2006. SEPA's plans call for the five centers to help officials solve environmental problems that extend beyond one drainage area or administrative region. The goal is to set up a network of competent environmental supervision centers covering every province, autonomous region, and municipality, which will conduct real-time supervision of 65 percent of the biggest polluters in China, by 2020.

Regarding fiscal tools, a separate account was established in the government budget for environmental protection. In the past, expenses for environmental protection were listed under other categories in the budget. According to SEPA, China's investment in environmental protection in the next five years is expected to reach 1.3 trillion yuan, or 1.6 percent of GDP. As for legal tools, the government is planning to revise the Environmental Protection Law in 2008 and to set up a comprehensive legislation network on environmental protection in five to ten years (Tang 2006).

Nevertheless, the initial achievement is far from satisfying. Though the 20 per cent reduction in pollution emissions required by the current five-year plan is a binding obligation, the state only managed to reduce energy consumption per unit of output by 1.23 per cent in 2006, well short of its 4 per cent goal. In the entire country, only six cities achieved the goal of cutting energy consumption in the first year of the 11th Five-Year Plan. Despite the strict measures adopted by the central state, many localities and enterprises are still seeking to extend coal production or build new steel and iron factories without approval. At the annual National People's Congress in March 2007, Premier Wen acknowledged that the government failed in 2006 to meet its energy and pollution goals. He blamed the setbacks on the slow pace of industrial restructuring, the growth of heavy industry, and the failure of some local governments to abide by national environmental law (Wen 2007). Regarding the revision to the Envi-

ronmental Protection Law, there is no real progress by the time of writing this article. However, one positive development is that the SEPA was upgraded to the ministerial level and renamed as the Ministry of Enviromental Protection in March 2008, which indicates the Chinese government's efforts to strengthen the law enforcement in the area of environmental protection.

A March 2007 report by *Outlook*, the official news weekly sponsored by the New China News Agency, showed that the new policy paradigm was being resisted at the local level. In order to attain the policy goal of a 20 percent cut in energy consumption per unit of GDP during 2006-2010, the central state has adopted a tight measure to control energy consumption in industry. Within this policy context, four central departments represented by the State Environmental Protection Agency have issued special decrees to rectify problems in polluting industries including metallurgy, smelting, and paper-making in Shaaxi, Shanxi, and Ningxia. Under these circumstances, the government of Fugu County in Shaanxi province shut down all 14 of its iron foundries and steel mills. However, half a year later, not only had all these closed mills resumed production, but an additional 14 mills had gone into operation.

Why did this happen? An important reason is the collusion between local officials and local businessmen. At first, the head of the county allowed two mills to restart their production on the condition that the mills deposited 150,000 yuan in caution money with the county government for a three-month term of production. This action set a very bad example. Shortly, other mills followed suit and made use of all kinds of methods, including offering the head of the county a bribe to restart production. In one case, the owners of the mill offered 100,000 yuan to the county head for its reopening (Chu 2007).

The policy setbacks of the central state demonstrate the gap between central and local policy elites in the paradigm shift process. Though central policy elites have been the advocates and supporters of the new policy paradigm, local officials prefer to pursue growth under the old paradigm. Such a scenario shows the limited capacity of the central state to impose its will on provincial and local authorities with a vested interest in polluting factories.

HOW TO MEDIATE PARADIGM SHIFT: A POLICY LEARNING PERSPECTIVE

The policy studies literature reveals that the institutionalization of new policy paradigms is a complex process (Hudson and Lowe 2004). As Heffernan put it (2002, 755), "One consensus will rework, not totally replace another." In other words, there is

often a significant degree of overlap between the old and the new policy ideas, for "however they may change them, new paradigms build on past paradigms, reforming them and seeking to modernize them. The wheel is never reinvented" (Heffernan 2002, 755). When new paradigms emerge, institutions, past policy decisions, networks of policy experts, and individual political actors play a key role in determining how fast and how widely new policy paradigms are institutionalized. As the above discussion of environmental policy illustrates, evidence for institutionalization of the scientific development paradigm is certainly not encouraging in China so far. It seems that the transition from the old policy paradigm to a new one will be a relatively long process.

From the perspective of policy learning, the process of paradigm shift is one of social learning, which is affected by two significant variables: policy subsystem structure and administrative capacity of the state, as illustrated by our conceptual framework (see figure 1). If a state has a high administrative capacity, and societal actors dominate the policy subsystem, then the conditions for social learning may be present. If the state is the dominant actor with weak links to society, then a form of endogenous lesson drawing can be expected to occur. In line with this reasoning, the slow institutionalization of the scientific development paradigm is not only due to the weak central state capacity relative to the rising local states in the policy context of decentralization and marketization, but also to the unchanged old policy subsystem, which fails to include new actors and agencies that represent different interests in the development process.

According to state capacity theory, political institutions can promote or constrain the autonomy and capacity of states. As political institutions are the key factors influencing state capacity, it is reasonable to contend that state capacity is the critical element of the paradigm shift process. A state with strong capacity can effectively mediate the paradigm shift and promote the institutionalization of the new paradigm. Under the authoritarian regime, the party-state in China is characterized by its relative autonomy from the forces and classes in Chinese society (Saich 2004). For a long time, due to the lack of a need to be responsive to social forces and the eradication of all potential opposition outside of the party, policy-making in China became increasingly monolithic and less grounded in socioeconomic reality (Saich 2004, 218-19). Though market-oriented reform and the ensuing social stratification based on differentiated social interests have forced the party-state to be more responsive, China under reform is still a strong state in terms of the structural coherence of party-state apparatuses and the dominance of the central state in policy initiation, especially in controlling the *nomenklatura* (a list of key cadres) system (Yang 2003).

In the case of the paradigm shift to scientific development, China's centralized

party-state political institutions seem have some advantages. With the formation of the new political leadership and the consolidation of their power from 2002 onward, especially after the personnel reshuffling at both the national and provincial levels after the 17th National Congress of the CCP in late 2007, the shift in the locus of authority has been completed successfully. Hu and Wen have consolidated their power base and expanded political support for the new policy paradigm. At least at the national level, the supporters of the scientific development paradigm have secured positions of authority and started to rearrange the organizations and standard operating procedures of the policy process so as to institutionalize the new paradigm down to the local level. That is to say, a consensus has been reached among the main actors in the central policy process.

However, resistance to the new policy paradigm is still strong on various fronts, ranging from local policymakers to business interests and the political opposition. China's continental size, huge population, and multilevel (five-layer) governing structure make it difficult for the central policy elites to counteract resistance, especially from local governments. Due to the economic decentralization and diversification, it is very common for local governments to move away from the policy lines set by the central state. Without doubt, defiant local policy elites have contributed to slowing the institutionalization of the new policy paradigm. In order to ensure the obedience of local policy actors, political means have been employed by the central leaders. The illustrating case in this regard is the ouster of Chen Liangyu, Shanghai Communist Party chief and an important member of the so-called Shanghai faction, in 2006. It is widely believed that Chen's resistance to scientific development led to his dismissal (Tang 2007).

If the ouster of Chen Lianyu is a negative example of using political means, a positive example is the appointment of people who support the new policy paradigm to leading provincial posts. Such a means has been widely employed since the 17th National Party Congress. A typical case is the deployment of Wang Yang to Guangdong in November 2007 as the head of Guangdong province, the front-runner in China's economic reform. As a new member of the CCP Politburo, Wang is regarded as a close associate of Hu Jintao. Before coming to Guangdong, Wang was secretary of the Chongqing CCP Municipal Committee. During his two-year term in that position, he was known for putting people first. He made petitions to Guangdong provincial authorities to recover wages owed to migrant workers from Chongqing. His motto was "Human lives are more important than GDP." His position in Guangdong indicates that Guangdong will be the pilot to the theory of scientific development in the prosperous coastal regions.

Just after he took office in Guangdong, Wang expressed his dissatisfaction with

development there. At the second meeting of the CCP Guangdong Provincial Committee under his leadership on December 25, 2007, Wang paid little attention to Guangdong's great economic achievements in terms of GDP (which exceeded that of Taiwan by the end of 2007); rather, he chose to highlight the province's problems in social development, including the lower-than-average high school recruitment rate. He pointed out that Gongdong's high school attendance rate in 2006 was lower than that of Zhejiang and Jiangsu, Guangdong's main competitors in the Yangtze River Delta. He identified the bottleneck of reforms facing Guangdong by listing five deficiencies inherited from the old mode of development: social development lagging behind economic growth, development lacking quality and creativity, rural-urban imbalance in development, resource scarcity, and livelihood problems. Wang said 22 times during his two-hour speech that cadres have to "emancipate their thoughts" and that the bottleneck of reforms had to be unclogged with a "do-or-die" spirit. He asked his comrades to work out effective policy measures for practicing scientific development and encouraging the general population to internalize it in their consciousness and behavior. He warned his comrades in Guangdong, "Our development has come to a critical stage; if the theory of scientific development cannot be practiced, our economic growth cannot be sustainable, our society cannot be stabilized, and our goal of common prosperity cannot be achieved" (Wang 2007).

The above-mentioned cases show that the central state has made great efforts to make local officials more compliant to central policy so as to enhance its policy capacity. However, the state-strengthening efforts by the central state so far are still in line with the traditional thinking of a strong central state at the cost of weak local government. It is oversimplified to place all the blame for the slow institutionalization on local officials. In fact, the entrenched old paradigm still shapes the behaviors of the policy actors in the local policy process. Local officials have been given little incentive to wean themselves from the old paradigm, as they are still under pressure to create jobs in their areas. Meanwhile, as tax collection has been increasingly centralized and local officials have few alternatives for raising funds, local governments are starved of tax revenue through land sales and development projects. Under these circumstances, it is difficult for local policy actors to accept and support the new paradigm.

To promote policy learning, the policy subsystem structure is another important variable to be considered, as shown in figure 1. In China, due to the totalistic nature of the state, civil society was stifled for a long time. As a result, policy subsystems were totally dominated by state actors, that is, party cadres and bureaucrats. Although an embryonic civil society has emerged along with the development of the market economy, the involvement in policy-making of societal actors, such as interest groups, mass media, and the public, is still very weak (Wang 2006). Socially disadvantaged groups

such as peasants, laid-off workers, and migrant workers from rural villages lack institutions and mechanisms to voice their opinions and ensure their rights. They have no formal channels through which to play the role of policy actors. Even the nascent social groups are not encouraged by the government. For instance, environmental NGOs are discouraged from playing a role in environmental protection policy, though these organizations are important potential allies of the government in institutionalizing scientific development. As the new green groups are not allowed in the existing environmental policy subsystem, the old actors, mainly local governments and energy corporations, still dominate environmental policy, which is not conducive to policy paradigm shift.

The exclusion of new societal actors from the existing policy subsystems demonstrates that the Chinese state is still reluctant to adapt to a new governance approach based on the state's partnership and negotiation with society. As Peters argued, bringing civil society into governance would enhance state capacity (Peters 2005). Without support from the new societal actors, the central state has a weakened capacity to overcome resistance from local governments and businesses that are embedded in the old paradigm. As a result, no new momentum is injected in social learning for paradigm shift, and this slows down the transition to the new policy paradigm.

The controversial PX Project (PX is the abbreviation of paraxylene, an important chemical material) in Xiamen, Fujian province, in southeastern China is a good case in point. In order to increase local GDP, the Xiamen municipal government decided to introduce a paraxylene project with Taiwanese investors (known as the PX Project). The PX Project was approved by the Fujian provincial government and the central government before construction began in late 2006. The total scale of investment in the PX Project is 10.8 billion yuan, making it the biggest industrial project in Xiamen's history. It was estimated that the project could yield an annual output worth 80 billion yuan after its completion in 2008, equaling 70 percent of Xiamen's 2006 GDP. The main base of the project was located in the Haichang district, which is only seven kilometers away from downtown and from the national scenic area Gulangyu. The project's port was located in the Xiamen National Nature Reserve of Rare Marine Species.

PX is a dangerous chemical and carcinogen, and its production should be located 100 kilometers away from cities. Given the major hidden danger the PX project posed to public safety, Zhao Yufen, a member of the Chinese People's Political Consultation Conference (CPPCC), led a proposal at the CPPCC annual meeting in Beijing in March 2007 to terminate the project. The proposal was cosigned by 105 CPPCC members and was named the top proposal at the year's CPPCC meeting. Zhao's proposal exposed the PX Project and aroused strong concern from the media and the public in Xiamen (Su 2007). In early June 2007, about 5,000 Xiamen citizens went to the

headquarters of the municipal government to protest the PX Project.

Under the pressure of the public protest, the Xiamen municipal government decided to postpone the PX Project and promised to make a further assessment of its environmental impacts. On 13 December 2007, a public hearing on the environmental impacts of the PX Project was held in Xiamen, and the overwhelming majority of the citizen representatives opposed the project. On December 20, the Fujian provincial government decided to stop the PX Project in Xiamen and relocate it to a peninsula near Zhangzhou, another city in Fujian. It was reported that Lu Zhangong, the provincial party secretary, made the following comments on the PX Project: "Though it is a big project, a good project, we should think it over as so many people oppose it. We should take the theory of scientific development, democratic decision-making, and public opinions into consideration" (Xinhuanet 2007).

The PX Project case shows that the participation of the public is an important force in social policy learning for paradigm shift, and a less antagonist local leadership and more cooperative state-society relationship can encourage the transition of the local policymakers to the new policy paradigm. In fact, the civic action by Xiamen residents gained the support of the State Environmental Protection Administration. Even *People's Daily*, the Communist Party organ, ran a front-page editorial condemning local officials who had disregarded President Hu's admonition to preserve the environment (Cody, 2007).

Another issue is that the role of political ideology in China's governance constitutes a barrier to social policy learning. As discussed above, the scientific development paradigm has come about in large part as a reaction against GDPism. This implies, at a minimum, that the development model promoted by Deng and Jiang is now deemed less than scientific. However, there was no open official criticism of the old policy paradigm and no wide public debate on it. Members of the fourth generation of leadership, though they are advocates of scientific development, are reluctant to criticize their predecessors' development strategy, because such a criticism would cause an ideological crisis. On the contrary, party theorists widely claim that the scientific development theory does not contradict Deng's precepts and regard it as a continuation of Deng Xiaoping Theory. Without a strong attack on the old paradigm, it is hard to successfully institutionalize the new paradigm.

To sum up, due to the weakening of central state capacity and the lack of dominance of societal policy actors in China, conditions are not well prepared for the social policy learning needed for a policy paradigm shift. Without a rethinking and revising of the dominant causal reasoning about policy problems, interventions, and objectives (May 1992) among the policy actors—both central and local and both state and societal—the institutionalization of a new policy paradigm will continue to encounter resistance.

CONCLUSION

Using the implementation of the theory of scientific development as an example, this article has explored the capacity of the Chinese state to advocate and institutionalize a policy paradigm shift. The formulation of the theory of scientific development by the new Chinese political leadership and its implementation represent a new policy paradigm in China, which signals a departure from the GDP-growth-at-any-cost model of development as it embraces both socioeconomic and environmental policy objectives. Although the theory of scientific development has placed the worst parts of the old policy paradigm under pressure, it is too early to assume that this spells the end of the old all-out-development paradigm. Viewed from the policy learning perspective, a policy paradigm shift is conceived of as a process of social policy learning, which is affected mainly by two important variables: state administrative capacity and policy subsystem structures. Due to the decentralization of central-local politics, the separation of enterprises and government, and the reconfiguration of social interests, the capacity of the Chinese state to formulate and implement policies is in decline. The reluctance of the Chinese state to include new actors and agencies representing different interests in the development process has left an unchanged policy subsystem which is embedded in the old policy paradigm. As a result, a policy subsystem dominated by societal actors, which is needed for social learning, is not present. To achieve a smooth and comprehensive shift to the new paradigm of scientific development, the Chinese central state needs to embrace new forms of governance based on partnership between the state and society.

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