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CHAPTER 41

Geography of China

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The pioneering work of North American geographers in the 1970s and early 1980s has laid a sound foundation for research and fieldwork opportunities in China (Karan *et al.* 1989), a nation largely closed to academics and others until the late 1970s. Building on this foundation, research on China geography since the last decade or so has witnessed phenomenal achievements in mass, diversity, and intellectual depth.

Geographers have for a long time been captivated by China's sheer size. But their recent scholarship must also be understood against the backdrop of that nation's groundbreaking reforms and transformations since the late 1970s. China's decisive integration into the world economy, in conjunction with its sweeping processes of socialist transition, has fascinated geographers all over the world. As this review will show, these changes have indeed defined the priorities and research agendas of many North American geographers. Their research

has been significantly facilitated and stimulated by extensive and increasing contacts with scholars in China, through long-standing collaborations, fieldwork, and international conferences especially since 1979 when exchange of ideas and visits among North American and Chinese geographers have flourished.¹ China's opening its doors has also motivated a large number of excellent Chinese students to pursue advanced training in North American institutions, who have added considerably to the human resources of China geography there.

The research output of North American China geographers is outstanding, which parallels the growth of China geography in general (Selya 1992*b*). The scope of their attention, however, is also uneven. In this review, we attempt to highlight achievements and dominant themes of inquiry since the late 1980s, as well as areas for future improvement.²

¹ Authors are listed alphabetically. Among the geographers on the Chinese mainland who have long collaborated with, or who have otherwise had significant impact on, North American geographers are Cai Qiangguo, Cai Yunlong, Cui Gonghao, Gu Chaolin, Hou Renzhi, Hu Zhaoliang, Liu Changming, Liu Peitong, Ning Yuemin, Shen Daoqi, Wang Ying, Wu Chuanjun, Xu Xueqiang, Yan Xiaopei, Yan Zhongmin, Yao Shimou, Ye Shunzan, Zhao Songqiao, and Zhou Yixing. At the same time, many geographers in Hong Kong and Taiwan have also had considerable impact on the work of North American geographers.

² This chapter focuses primarily on peer-reviewed publications and significant contributions in English by North American geographers during the period 1989 to 1999. The bibliography is selective and not intended to be exhaustive. The reader should be reminded that the Asian Geography Specialty Group has a separate chapter that deals with the remainder of Asia excluding China, and additional scholarly insights on recent geographic research on Asia may be reviewed in that chapter.

Economic and Spatial Restructuring

Recent research on China's economic geography has concentrated on two substantive foci: regional development and foreign investment-induced growth. Both are rooted in China's economic transformations and have far-reaching spatial implications.

Regional Impacts of the Reforms

An overriding question geographers ask is in what ways China's economic reforms have impacted the regional disparity in income, industrial output, investment, and processes leading to these changes. Veeck's (1991) edited volume, *The Uneven Landscape*, represents one of the earlier efforts in examining the spatially uneven results of China's reforms. In both empirical and conceptual terms, research in this subfield has significantly gained sophistication. Attempts to measure the extent and changes of regional inequality range from earlier studies comparing a handful of provinces to multi-scalar approaches encompassing interregional, interprovincial, and intraprovincial analyses (Fan 1995a; Wei 1999). A body of research has produced some definitive findings, namely, the regional gap between eastern or coastal China and western or interior China has widened, interprovincial inequality declined during the 1980s, the trend of intraprovincial inequality varied from one province to another, and rural-urban inequality has increased (Fan 1995a, b; Leung 1991; Lo 1989a, b; Shen 1999; Su and Veeck 1995; Wei 1998; Wei and Ma 1996; Ying 1999). Fan (1995b), Wei (1998), and Wei and Ma (1996) point out that the paradox of decline of interprovincial inequality amidst heightened uneven regional development during the 1980s can be explained by the rapid growth of a new coastal core/corridor, whose effect was offset by the lagging growth of old traditional industrial centers also along the coast and especially in the northeast. Continued growth of the new core/corridor is likely to bring about regional divergence in economic development in the future.

Most subprovincial studies have focused on Guangdong (Fan 1995a, b; C. M. Luk 1991) and Jiangsu (Fan 1995a; Ma and Fan 1994; Su and Veeck 1995), reflecting multiplier processes in scholarship, data availability, and fieldwork opportunities. Research on the Pearl River Delta is especially noteworthy (Lin 1997; Lo 1989a, b). Lin's (1997) book, *Red Capitalism in South China*, offers an in-depth spatial analysis of economic growth and transformation in that region, focusing on

market forces, the role of Hong Kong, and changes in basic industrial and transport infrastructure. A special issue of *Chinese Environment and Development* (1995) is devoted to Jiangsu, including specific studies examining the widening gap between Subei (northern Jiangsu) and Sunan (southern Jiangsu). Analyses of intraprovincial inequality in Shanxi (Leung 1991), Fujian, Zhejiang, Anhui, and Hunan (Fan 1995a) have also been conducted. Studies on Taiwan are fewer, with some attention on changes in regional development (Selya 1993) and the industrial and service economies (Selya 1994b; Todd and Hsueh 1992).

Though we are still far from developing a cohesive theory of Chinese regional development, recent research has offered some powerful explanations and potential conceptual frameworks. Researchers point to shifts in political and development philosophies, especially China's abandonment of the socialist ideology of equality and adoption of comparative advantage as a guiding principle of regional development (Fan 1997; Ma and Wei 1997). Explanations have also focused on specific agents and media of development, namely, the central state, local entrepreneurs and governments, small towns, and foreign investment (see below). Fan (1995a) interprets their effects on regional development using the "development from above, below, and outside" framework (Shen 1999), and Wei (1999) argues for a multi-mechanism research approach.

Political-economic and/or institutional approaches have been popularized by scholars who argue that the central state remains a key determining factor of regional economic growth, through balanced development strategies (Xie and Dutt 1991), preferential policies (Fan 1995b), investment (Ma and Wei 1997; Shen 1999; Su and Veeck 1995; Wei 1995b), development plans (Leung 1991), promotion of market forces through urban centers (Tan 1990), and fiscal decentralization (Tang *et al.* 1993; Wei 1996). Recent studies have sought to emphasize forces at work below the central-state level, including local entrepreneurs and human resources (Leung 1996; Shen 1999), small towns and cities (Lin and Ma 1994; Ma and Lin 1993; Tan 1991), and rural collective and/or industrial enterprises (Fan 1995a; Lo 1990; Marton 1995; Veeck and Pannell 1989). More attention is needed for identifying the micro-level agents and processes that explained for changes in the Chinese spatial economy.

Foreign Investment

There is no question that foreign investment and trade have emerged as a significant factor of China's quest for

rapid economic growth. Geographers are especially interested in examining the spatial distribution of foreign investment and determinants of that distribution. Some fine analytical work includes those examining the roles of state policy and incentives, urban infrastructure, accessibility, urbanization and agglomeration economies, social affinity (Gong 1995; Leung 1990, 1996), and the regional impacts of foreign trade (Fan 1992). There is overall agreement that foreign investment and trade have accelerated urban growth and exacerbated regional disparities of economic development (Fan 1992; Leung 1990; Xie and Costa 1991).

Notable in this body of literature are studies that highlight the critical roles of business practices, kinship ties, and cultural affinities in reducing transaction costs and channeling foreign investment toward selected localities (Cartier 1995; Wu 1997). Hsing (1995, 1996) has done some intriguing analyses on the provocative and sometimes sensitive topic of Taiwanese investment in mainland China. Her 1998 book, *Making Capitalism in China: The Taiwan Connection*, is an excellent example of the high-quality analytical work done by geographers on the complex political economy of foreign investment in China and its murky conflation with politics and business ties in Taiwan. Leung (1993) examines how industrial development and personal linkages interlock in a close-knit and effective manner in Hong Kong's neighbor, the Pearl River Delta, and provides a conceptual precursor to the above-cited works of Hsing and Lin. The 1998 essay of Hayter and Han investigates China's open door policy on foreign investment and its linkage to technology transfers through Hong Kong, Taiwan, and Singapore. The idea of the increasing recognition of that spatial reality termed "greater China" is implicit if not explicitly manifested here in their essay.

Processes of Urbanization and Population Movements

Research on Chinese cities and urbanization has always attracted the largest number of China geographers who, as in the previous decades, continue to produce an impressive corpus of literature (Pannell 1990). It would not be an exaggeration to claim that, outside of China, North American geographers have done more work on Chinese cities and urban development than scholars in any other social sciences discipline. Together with increasing attention on migration, which intertwines with processes of urbanization, this body of literature

has shed much light on various aspects of individual cities, the urban system, and urbanization during socialist transition.

Definitions, Urban Growth, and Rural-Urban Relations

Geographers have been at the forefront of research to unravel the mystery of the shifting definitions and complex typologies of China's urban and rural populations and to ascertain their sizes. Pioneer work in the 1980s has helped social scientists examine for the first time the intricate methodological issues involved in studying China's urban system. Important earlier research on urban policy and urbanization have been reviewed and brought up to date by Chan (1992, 1994a, c), Chan and Zhang (1999), Tan (1993a), and L. Zhang and Zhao (1998). It should be noted that this line of research represents essential groundwork that must be accomplished and sustained before the nature of China's urbanization, either in the socialist or reform period or in the future, can be meaningfully analyzed.

A large number of individual cities have been studied from different perspectives (Chang 1998; Fung 1996; Fung *et al.* 1992; Hsu 1996), including comprehensive monographs on Hong Kong (Lo 1992), Taipei (Selya 1995), Shanghai, Tianjin, and Guangzhou (Yusuf and Wu 1997). Significant progress has been made in documenting the morphology and internal structure of Chinese cities in the border region (Gaubatz 1996, 1998) and elsewhere (Gaubatz 1995a, b, 1999; Lo 1994, 1997). On the other hand, urban planning (Xie and Costa 1993), changing urban land use and suburbanization have not attracted much attention, despite their importance for China's urban future.

An impressive body of literature has examined the impact of economic reforms on urban change. Various issues have been addressed, ranging from the role of socialist central planning in urban growth (Xie and Costa 1991), urban industrial development (Luo and Pannell 1991), to the provision of urban infrastructure services (Chan 1997). A major block of the urban literature relates to the transition of China's urban system at the national level (Chang 1989; Chang and Kim 1994; Han and Wong 1994; Hsu 1994; Pannell 1995) as well as regional level (Lo 1989a; Pannell and Ma 1997; Tan 1991). Issues of the relationship between city size, urban growth, and national economic development have received much attention from geographers, as have the roles of large cities (Pannell 1992; Wei 1995a) and small towns (Lin and Ma 1994; Ma and Fan 1994; Ma

and Lin 1993; Pannell and Veeck 1989; Tan 1990, 1991, 1993a) and the effect of institutional factors (Fan 1999b) in urban and economic development. The question of city size in China's future urban development demands more serious scrutiny as large cities are already highly congested and their facilities overburdened by residents and migrants. More attention should be directed to the development of small towns as centers of rural-urban migration and economic production. Along this line, Ma and his co-authors have been developing the notion of "urbanization from below" (e.g. Ma and Fan 1994), a conceptually rich area that merits further consideration.

Many geographic studies on China's countryside, still home to two-thirds of the nation's population, are conducted in relation to processes of urbanization and industrialization. They include research on small towns cited above, rural-urban relations (Tan 1993b), rural industrialization (Shen 1999; Su and Veeck 1995), and rural organizational reform (Tan and Luo 1995). Notable is McGee's (1989, 1991) work on *desakota*, which examines economic development in the zones between and spanning rural and urban entities. Building on that work, Marton's (1994) and Marton and McGee's (1996) research on the lower Yangtze Basin focuses on policy formulation related to rural industrialization and the conceptualization of extended metropolitan regions. More case studies and theoretical analyses of the rural-urban interface are clearly needed to advance our understanding of this important area of research.

Migration Studies

Geographers can be proud of their achievement in analyzing the patterns of migration in China. The causes and consequences of massive rural-to-urban migration that began in the early 1980s as a result of relaxed state control of migration have been critically examined. Known sometimes as the "floating population," the broad spatial patterns of the migrants has been mapped (Ma 1996), their classifications attempted (Chan 1996; Fan 1999a), and the interactions between migration, economic growth, and social change explained (Fan 1996; Smith 1996). The relationship between migration and urbanization, and the important roles of the *hukou* institution in engendering multiple tracks of migration, have also received much attention, as the studies by Chang (1996), Chan (1994a, b), Chan and Zhang (1999), and Fan (1999a) exemplify. Aside from these established areas of inquiry, more recent concerns of Western geographic research, such as the power of place in migration and settlement formation (Ma and Xiang 1998), and the role of gender (Fan and Huang 1998), are also

represented in China geographers' recent works. On the other hand, geographers in North America have paid only scant attention to migration in Taiwan (Selya 1992a) and have not specifically studied migration to, from, and within Hong Kong.

Food, Resources, and Environmental Challenges

Heightened attention on the relationship between reform-led economic transformations and environmental changes characterizes geographers' research on China's resources and environment. This area of research is also illustrated with new debates on the one hand and increasingly sophisticated scientific inquiries on the other.

This is an increasingly challenging and salient topic among geographers, economists, agricultural scientists, and others, including those who anticipate a looming confrontation between China's growing population, economy, and limited resource base to the extent of a crisis. The geographer who has analyzed most profoundly China's ability to deal with its population growth and growing consumption demands is Smil (1998). His 1993 book, *China's Environmental Crisis*, created almost as much discussion and controversy as the polemical and strident writings of Lester Brown. Smil's work touches on all aspects of China's environment—land, water, air, energy resources, pollution, and population growth all seen in the context of the limits to national growth and development. In response to Lester Brown's warnings, Smil's (1995a, b) multifaceted analyses conclude that given appropriate policy and central government commitment, China can feed itself during the first quarter of the twenty-first century by improving farm efficiency, reducing post-harvest waste, using better systems of raising farm animals, and consuming a greater variety of protein. At the same time Smil notes the challenge to China that results from some of its current farming practices that he asserts will not be sustainable over the long term.

Themes of production efficiencies are examined by Veeck and his colleagues (Rozelle *et al.* 1997; Veeck *et al.* 1995; Veeck and Pannell 1989), who have pioneered studies of the spatial variations in farm productivity associated with changes in the nature of cropping systems and supplementary forms for raising farm family incomes. VanderMeer and Li (1998) have studied changes in production and management in Fujian, and

Lo (1996) has examined the integrated agriculture-aquaculture system in the Pearl River Delta. Muldavin's (1996, 1997) recent studies in Heilongjiang examine policy issues and raise concerns over the impacts of agricultural reforms on the environment in rural China.

A number of special issues of *Chinese Environment and Development* focus on environmental themes, a testimony of geographers' attention on environmental implications of China's reforms. They include Xu and Tan's (1995) article which uses the agroecosystem health approach to analyze China's agriculture, Harris's (1996) work on wildlife conservation, and Chan's (1994b) paper on economic development. Tan's (1989) work also highlights the problem of environmental degradation due to rural industrialization. In addition, Whitney (1991a, b, 1992) has conducted some important studies on waste management, soil erosion, and sustainability. The 1993 book by Whitney and Luk, *Megaproject*, is a remarkable contribution by North American geographers to the important research and debates on China's Three Gorges Project.

Scientific inquiries into environmental changes in China have witnessed not only increased attention by physical geographers, but also international funding and collaborations. One example is Shiu Luk's brilliant work on soil erosion, sponsored by the Canadian government. He has led teams of North American and Chinese researchers to conduct a series of excellent studies on the laterite soils of Guangdong and the loess soils of North China (Hamilton and Luk 1993; Li *et al.* 1995; S. H. Luk 1992; S. H. Luk and Cai 1990; S. H. Luk *et al.* 1989, 1990, 1993; S. H. Luk and Woo 1997; Zhu 1990). Another example is Liu's work, which focuses on paleoenvironmental records of vegetational changes and assessments of the relative impacts of climate and human disturbance (Kremenetski *et al.* 1998; Liu and Qiu 1994; Liu *et al.* 1998).

Cultural Landscape, Historical Geography, and Tourism

Given China's long history and diverse regional cultures, it is surprising that geographers have not paid more attention to its rich historical and cultural landscapes. Knapp has written more than any other scholar in any discipline on material cultural landscape. Based on extensive fieldwork, he has amply documented and analyzed China's rural landscape and vernacular architecture, including bridges and rural house types, their internal

design, construction, decorations, and symbolism (Knapp 1989, 1990, 1993, 1994, 1998a). Using the mode of interpretative cultural geography, he examines the notions that villages are places impregnated with meanings that can be read as texts (Knapp 1992, 1998b). Through literary writer Shen Congwen's essays written in the 1930s, Oakes (1995) integrates gender, regionalism, and modernity to interpret the landscape of western Hunan.

Despite the abundance of historical materials on China, geographers have done little work on historical geography, due partially to the difficulty of using historical documents. The few writings on historical urban development in the 1960s and 1970s are regrettably not joined by more recent publications. The only exception is Hsu's work on historical cartography, including a useful survey and introduction to China's historical atlases (Hsu 1997). In 1986, seven maps of the Kingdom of the Qin, the earliest extant in China dated around 300 BC, were discovered in today's Tianshui, Gansu. Hsu (1993) has expertly analyzed their content, symbolism, and cartographic execution, compared them with the well-known Han maps that she had studied earlier, and analyzed the constraints for the development of traditional Chinese cartography in the context of Chinese scientific tradition.

Tourism has received considerable attention from geographers. Notable are Lew and Yu's (1995) edited volume, *Tourism in China*, and Y. W. Zhang and Lew's (1997) paper, which sketch out the basic characteristics of tourism development in China. Geographers have also studied ethnic tourism in Xinjiang (Toops 1992, 1993, 1995) and Guizhou (Oakes 1997), and airline liberalization (Yu and Lew 1997). An excellent beginning in exploring the theme of cultural space has been made by Oakes (1992, 1993, 1997), who, using ethnic minority groups in southwest China as case studies, examines how ethnic identities are consciously created and localized in space in the wake of economic reforms and in the context of growing national and international interests in ethnic tourism. His 1998 book, *Tourism and Modernity in China*, elucidates more fully these ideas, the notion of modernity, and the relationship between tourism and cultural production.

New and Future Areas of Research

As we take stock of the achievements of North American geographers in China research, it is also clear to us that these achievements have been uneven, and that there are

emerging areas and long-standing gaps in the scholarship that need more attention. Specifically, the following areas warrant higher priorities in geographers' research agenda.

The research on economic geography has generally been dominated by investigations of urban-industrial or rural-agricultural sectors, with only scant attention given to other sectors. There are some exceptions. Comtois's work (1990), including a collaboration with Rimmer (1996) which examines shipping and commercial activity through Hong Kong into China, provides a valuable reminder to the community of China geographers of the significance of transportation to the broader field of economic geography. Another exciting work is by Han and Pannell (1999), who focus on the growth and spatial variation in privatization, a vital issue in the transformation of China's industrial and service economies. These are good examples of the many diverse issues in the Chinese economy that deserve more attention by geographers.

In contrast to the accomplishments by geographers in analyzing issues of urbanization and migration in China, they have almost completely neglected fertility and mortality, two building blocks for understanding population change. There is some attention on sex ratio in Taiwan (Selya 1994a), but demographic studies on China are rare. This is especially problematic given the importance of the one-child policy and aging processes in determining the growth, social, and spatial dynamics of the largest country in the world. Similarly, medical geography has witnessed only sparse research. Smith (1993, 1998) and Smith and Dai (1995) have shown that the benefits of improved health care and diet since the reforms have not been evenly distributed over space, with increasing disparities between urban and rural places which exacerbate gaps inherited from pre-reform eras. Health-care, diet, and income inequalities are also evident within urban and rural areas, where the rural poor, especially women, lag most seriously behind. Lam and her associates (Lam *et al.* 1993) have studied the spatial patterns of cancer mortality in the Tai Hu (Tai Lake) region in the 1970s. But generally speaking medical geography has not been a central research area for most China geographers in North America.

Geographers have as a whole been lagging in their examination of gender and gender-related issues in China, especially when compared with non-geography China scholars. But new exciting beginnings are emerging in the 1990s, as witnessed by Cartier's (1998) work arguing for the centrality of gender in understanding the geography of China and the nature of China's reforms, Fan and Huang's (1998) study which foregrounds the

agency of migrant women and their migration experiences, and Oakes's (1995) study of China's gendered landscape from a literary perspective. It is hoped that a critical mass of scholars and writings will soon come into being and that they will enable more visible contributions by geographers to this exciting subfield.

North American geographers who specialize in China's regional development and urban and economic geography have produced many studies rich in empirical and quantitative analyses. At the same time, we have found relatively little work using ethnographic and qualitative methods, although China geographers do confront ethnic issues seen embedded in some of our discourses on migration, gender, urban, tourism, cultural, and historical studies. Likewise, political, social, cultural, and historical geography, and rigorous theoretical inquiries are generally underrepresented. Given the centrality of political economy to much recent research in China studies, it is surprising that North American geographers have not developed more fully political economic and other theoretical perspectives specific for the study of this region. In addition, there is a general lack of research on the roles of space and place in China's long history and in shaping China's cultural landscape, landscape as text, geopolitics, regionalism, regional and place identities, national minorities, and ethnicity among the Han Chinese. These challenges must be met before China geographers can play more central roles in Sinology and China studies in general.

We should point out that geographers have not been very active in producing texts on China for graduate and undergraduate teaching, despite the popularity of courses on China at both levels throughout North America. One exception is Smith's 1991 text, *China: People and Places in the Land of One Billion*, which is an excellent and comprehensive survey of China with emphases on the spatial organization of production, distribution, and consumption. Our view is that geographers should be more proactive illustrating the importance of geographic perspectives in understanding the complexity of China, by not only publishing in specialized outlets but also by writing for geography and non-geography courses. Finally, North American geographers should also seriously consider reviving the efforts for a journal on China geography. We believe that the publication experience of *Chinese Environment and Development* (formerly *Chinese Geography and Environment*), which included many excellent papers during its life-span from 1986 to 1996, as well as collective commitments from China geographers, would go a long way toward establishing a unique and high-quality journal focusing on geographic research on China.

Conclusion

Viewed as a whole, the development of China geography in North America since the late 1980s has been most impressive, though the gains have been uneven and some areas remain underexplored. Urban, regional, and economic changes in the post-reform regime have almost monopolized geographers' attention, leaving only a small number of individuals working on physical, cultural, historical, and medical geographies. Given the relatively small, albeit growing, number of China geographers in North America, our assessment is that they have achieved selective excellence with new exciting work in emerging areas.

China geographers have begun to move away from a tradition that was largely empirical, to research approaches encompassing new concepts and modes of discourse, and contextually sensitive theories. Perspect-

ives emphasizing political economy, regional cultures, social networks, and human-environment interactions, for example, have enabled the scholarship of China geographers to gain increasing recognition among non-China specialists and non-geography China experts, as witnessed by the success of China geographers publishing in disciplinary flagship journals such as *Annals of the Association of American Geographers*, and leading China journals such as *China Quarterly*. Yet the overall impact of China geography on the rich field of Sinology remains to be strengthened, and the process of intellectual maturation from a regional mode of research to one more substantive and theoretical is not yet complete. But the speed of progress in the last decade or so, and continued opportunities for cross-fertilization across the Pacific and with non-geography colleagues, have convinced us that whereas the field of China geography has borne impressive fruits in the past, the ground is so fertile that more and better fruits can be produced in the years ahead.

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