

THE BIRTH OF THE CHINESE POPULATION:  
A STUDY IN THE HISTORY OF  
GOVERNMENTAL LOGICS

by

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## ABSTRACT

It was only in the early twentieth century that China discovered that it had a population, at least if a population is understood not as a number of people but instead in terms of such features as relative levels of health, birth and death rates, sex ratios, and so on—that is, as an object with a specific rationality that can be managed and improved. In 1900, such a conception of the population did not exist in China; by the 1930s, it was utterly pervasive. How did this transformation take place? This dissertation argues that it occurred at the level of techniques of governing and systems of knowledge production, and explains it from the perspective of changes in the institutional and epistemological forms by which interventions into other people's activities are organized.

The installation of populationist practices into China is tracked in four sites:

1. The problem of “race efficiency”—formalized in this period as the cost in “race energy” of producing a given increment to a population—and analyses of the effects of different kinds of social organization on the production of life.
2. The institutional division of population registration into censuses (“statics”) and vital statistics (“dynamics”)—in a word, the formation of a statistical system based on *mechanics*.
3. Public health, whose object of care is not patients but the collective life of the population and its conditions of existence.
4. The problem of the China's “rural surplus labour-power” in relation to the formation of a national economy.

This dissertation shows how the privileged position of the population in political and economic reflection in Republican China carved out a field of governability by which it was possible to enchain a variety of previously disconnected fields of activity into a single logic, the axiom of which was the *capitalist accumulation of life*.

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WHICH “POPULATION PROBLEM”?

Something like the problem, or question, of population (人口問題 *renkou wenti*) made its first appearance in China in the very early years of the twentieth century as a problem of numbers: How many people does China have? A sustained discussion of the size of the Chinese population and how to count it—the discussion which most immediately preceded the period I will be concerned with in this dissertation—can be dated to the period 1903–1912. In 1903, Liang Qichao 梁啟超 (1873–1929), in exile in Japan and probably the most famous voice of political reform in China at the time, published an analysis of historical population statistics in China in *Xinmin congbao* 新民叢報, one of the several major periodicals he organized during his long career.<sup>1</sup> In 1904, the American statistician W.W. Rockhill (1854–1914) published *An Inquiry into the Population of China*,<sup>2</sup> which was translated into Chinese in 1911 with a

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1 Liang, “Zhongguo shishang renkou zhi tongji 中國史上人口之統計 (Statistics on China's Historical Population),” 1903. Prior to this essay, the only references to population that I have found are tables of figures, devoid of discussion. In 1897, Liang Qichao's *Shiwubao* 時務報 published a translation of Tojō Teikichi 古城貞吉's estimate of China's population: “Zhongguo renkou 中國人口 (The Population of China),” 1897. It was presented without interpretation. From 1900 until about 1907, the emerging periodical press regularly published, without attribution, tables or series of population data, but with little or no explanation of what they meant or why they were important; see, for instance, Anon., “Zhina renkou biao 支那人口表 (A Table of the Population of China)” in *Qingyi bao* 清議報 (June 26, 1901), another Liang Qichao organ published from Tokyo; Anon., “Zhongguo renkou biao 中國人口表 (A Table of the Population of China),” in *Xuanbao* 選報 (*Selected Reports*, November 11, 1901); Anon., “Ge sheng renkou xianzai shu 各省人口現在數 (A Count of the Present Population of Each Province),” in *Zhejiang chao* 浙江潮 (*Zhejiang Tide*, February 17, 1903); and Anon., “Zhongguo renkou zuijin zhi tongji 中國人口最近之統計 (The Most Recent Statistics on the Population of China),” in *Xinmin congbao*, March 12, 1903. For an analysis of the conditions for the emergence of many of these periodicals, see Zhang Qing 章清's essay, “Wan Qing 'sixiangjie' de xingcheng yu zhishifenzi de 'gonggong kongjian' 晚清 '思想界' 的形成與知識分子的 '公共空間' (The Formation of the Late Qing 'Intellectual World' and Intellectuals' Public Space),” 2007.

2 Rockhill, 1905 (1904).

commentary by an unknown author who styled himself Ming Shui 明水.<sup>3</sup> The latter also translated and commented upon the work of the Japanese scholar Negishi Tadashi 根岸佶 (1874–1971) on the same problem.<sup>4</sup> In 1912, after the results of the 1910 census of households undertaken by Qing dynasty's Minzhengbu 民政部 (Ministry of Civil Affairs) became known, Rockhill published another study, “The 1910 Census of the Population of China.”<sup>5</sup> Chen Yujing 陳裕菁's 1912 essay, “Zhongguo hukou wenti 中國戶口問題 (The Problem of China's Administrative Population),”<sup>6</sup> begins with Rockhill's analysis and is, as far as I can tell, the first attempt to arrange a variety of estimates of China's historical and contemporary population, from both Western observers and Qing statistical sources, into some kind of coherent series.<sup>7</sup>

The primary purpose of the 1910 census of households—which would have been followed in 1912 by a census of individuals, but for the collapse of the Qing dynasty and its replacement by the Republic—was to establish a demographic basis for the size of the Provincial Assemblies (諮議局 *Ziyiju*) created under the New Policies (新政 *Xinzheng*) reforms initiated in 1905, along the lines of the American model of a census. A larger provincial population would result in a larger Provincial Assembly, which would occupy a proportional number of seats in the National Assembly (資政院 *Zizhengyuan*), first convened in 1910 (in advance of the results of the

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3 Ming, “Zhongguo renkou wenti 中國人口問題 (The Question of the Chinese Population),” 1911a.

4 Ming, “Zhongguo renkou wenti, xu diwu hao 中國人口問題, 續第五號 (The Question of the Chinese Population, cont’d.),” 1911b.

5 Rockhill, 1912.

6 The term used for “population” here, 戶口 *hukou* (“households and mouths”), is a specifically administrative category of very long standing in imperial Chinese state practice. Its proper domain is the state. I will return to this category in Chapter Three. The other, new, term for population, 人口 *renkou*, is, as we will see, a more properly natural-scientific category, though it will not—indeed, cannot—exist apart from a practice of governing in which the state is centrally involved.

7 Chen, 1912. Chen's sources start with Hubu 戶部 (Ministry of Revenue/Households) returns for 1743, run through the estimates given by such Western observers as the French Jesuit Jean Joseph Marie Amiot (1718–1793) and the British consular explorer Alexander Hosie (1853–1925) and the returns from the 1910 Census.

census).<sup>8</sup>

In another register, a kind of proto-Malthusian notion of overpopulation in relation to resources as a cause of social disorder first appeared in print in China at basically the same time. Two anonymous articles appeared in the flagship journal of the constitutional monarchist movement, *Dongfang zazhi* 東方雜誌 (*Eastern Miscellany*):<sup>9</sup> “On China's Condition of Order or Disorder Arising from the Size of Its Population” in 1904,<sup>10</sup> and “On the Connection between China's Condition of Internal Order or Disorder and Its Population” in 1907.<sup>11</sup> Similar articles followed in other venues.<sup>12</sup>

From these rather humble beginnings, however, the problem of population was very rapidly distributed into a whole series of other problems and forms of knowledge, some old and some new, and maintained in this distribution only superficial and tenuous connections to its original, more or less enumerative, appearance. Very quickly, that is, we find the problem of population being inscribed into the field of social life and practices in a number of ways, at a variety of levels. In 1900, the idea that interventions at the level of a population could be used to induce changes or adjustments at the level of general social organization was completely absent from China. For all the provenance, density, and sophistication of the tradition of governmental thought in China, an immanent relationship between a given state of a population and a set of possibilities of development had never been specified. No major transformation in this regard is

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8 The basic official documents pertaining to this census were prepared and published by the Minzhengbu in 1910 as the “Memorial on the Regulations Governing the Census of Households” (調查戶口章程摺 *diaocha hukou zhangcheng zhe*). For an extended discussion of the planning for and process of this census, see Hou Yangfang 侯楊方, *Zhongguo renkou shi* 中國人口史, 第六卷: 1910–1953 年 (*The Population History of China, Vol. 6: 1910–1953*), 2000: 20–31.

9 For a useful précis of the political parties and purposes behind *Dongfang zazhi*, see Judge, *Print and Politics: 'Shibao' and the Culture of Reform in Late Qing China*, 1996: 29.

10 Anon., “Lun Zhongguo zhiluan youyu renkou zhi zhongguo 論中國治亂由於人口之眾寡,” 1904.

11 Anon., “Lun Zhongguo zhiluan yu renkou zhi guanxi 論中國治亂與人口之關係,” 1907.

12 For instance, Anon., “Lun hukou guoshu zhi huan 論戶口過庶之患 (On the Harm of Overpopulation),” 1908.

entailed by the fact of a discussion of the size of China's population, nor even by significant plans to reform a census machinery. By the 1930s, though, the notion that the state of the population was inextricably connected to *everything else* was absolutely pervasive. Every significant governmental project launched in Nationalist China from that date onward already presupposed the existence of this web of connections.<sup>13</sup> Within a couple of decades, it had come to constitute no less than the fundamental matrix of governmental activity. As I will show in the following chapters, it was effectively no longer possible *not* to govern with reference to it.

The rapidity of this transformation did not occur as an expansion of the kinds of discussions summarized above; it was the effect of a series of displacements and a proliferation of the sites in which the population's "effects" were detected. What actually constitutes the problem of population in its real historical existence is the formation and composition of this distribution of knowledges and practices of governing. Indeed, the problem of population proper, if I may call it that, really emerges only when discussion moves beyond the question of numbers of people and begins to concern the determination and management of some new thing, some *x*, which is given the name "population." It is the task of this dissertation to describe the formation in China of the governmental ensemble to which a problem of population correlates.

We will not be able to give any one definition of this *x*, since it appears as different things in different contexts, composed of different elements and related to different variables. Nor, then, would we be able to define a population and then proceed on the basis of this definition to determine the problem's "proper" dimensions, to differentiate a "real" from a merely putative or "so-called" population problem, real and effective interventions from misguided or "pseudo-scientific" ones. Such periodic adjustments are certainly important as an impetus for change in

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<sup>13</sup> This claim relies on a distinction between *governing* and *violence*. Certainly the brutal suppression of the Communists was the other major Nationalist project in the late 1920s and 1930s, but those campaigns were not really "governmental," *stricto sensu*. For a discussion of how a properly governmental apparatus involves "processes of subjectivation" rather than of simple destruction, see Agamben, *What is an Apparatus? and Other Essays*, 2009: 11–12.

the *internal* history of the various knowledges involved, but they are not the present problem. Instead of an analytic approach, which would begin with a correct determination of the population, I will take a descriptive approach to the problem itself: When people speak of dealing with problems of population, and take concrete measures to intervene in it, what is it they are speaking of? What are they actually doing?

Only sometimes, it turns out, does the matter turn on the question of a number of individuals. Even then, this quantity is usually a form of appearance, a momentary distribution, of something else. The problem is *not* ultimately one of numbers: its various aspects, corollaries, and tributaries do not converge into, and are not reducible to, the problem of a number of units in relation to questions of subsistence or relative geopolitical strength. It is a question rather of questions like the following: What are the effects on a population of its conditions of existence? What historical, cultural, biological, environmental, necessary, or accidental factors have given the Chinese population its present form, extent, and characteristics, and placed it in the specific relationship it maintains with the economy and the possibility of development? Where can one find effective points of intervention, in order to steer the population toward development? How and where can governmental efforts be most efficiently and judiciously applied, not *to* the population as from outside of it, but *within* the field of processes which the population reveals and determines? How, finally, can the various machineries of governing be calibrated to the population, and to each other by reference to it, to maximum effect? None of these questions had any meaning whatever in the context of late imperial Chinese governing, and nor could they have, for reasons I will explore in Chapter Three. But they are the *essential* questions in the Republican period. It is less a matter of increasing or decreasing numbers than of the effective use of the life of the population, and the implantation of regulatory mechanisms at each point which bears upon the creation and distribution of that life.

I will not, then, accept the “demographic postulate” as a simple fact, but rather, suspend belief in populations, so that I may examine what different apparatuses of knowledge tell us about them, without reducing the investigation to the question of how well or how poorly they capture an object that we somehow—but how?—already know. The goal here is not to evaluate late imperial population registration and, anticipating the argument somewhat, let us call it the capitalist populationist regime, according to their greater or lesser approximation to an object the nature and structure of which we know well enough to use as a yardstick of evaluation. Rather, it is to examine the historical development of the technologies of knowledge through which this object is given in the first place. Thus, I am not addressing an historical-demographic problem, but the problem of the epistemological transformation which produced the very notion of population in terms of which alone the techniques of historical demography make sense. How, indeed, could we gain this object, with reference to which we evaluate this or that technology of knowledge, if not through the operation of some definite technology of knowledge? To be sure, where the notion of a population appears, it appears to apply universally, but this is different than its actual historical existence. Rather than be concerned with how a given knowledge—say, demography—attains the possibility of accuracy *vis-à-vis* a phenomena, or the obstacles that it faces or that it overcomes, or the reasons for its failure to achieve accuracy, the object here is the fact that, at a very specific historical moment, a great variety of people in China suddenly realized that they were faced with a problem they never knew existed, and devoted themselves to solving it. This, rather than whether any particular notion of population is correct or not, is the present problem.

#### THE POPULATION–FAMILY–ECONOMY NEXUS

But where is the break? Where do we find the passageway between one form of governing and

another? It can be found, I think, in a particular phenomenon, one that, moreover, was hardly unique to China, which is that, for a whole class of people in the second decade of the twentieth century, China suddenly appeared to have been stricken with a virtually inexhaustible series of “social problems” (社會問題 *shehui wenti*): the problems of women (婦女問題 *funü wenti*), of poverty and unemployment (貧窮 *pinqiong* and 失業問題 *shiye wenti*), of crime (犯罪問題 *fanzui wenti*), of peasants and rural society (農民 *nongmin* or 農村問題 *nongcun wenti*), of sovereignty (權力問題 *quanli wenti*), of minorities (少數民族問題 *xiaoshu minzu wenti*)—the list goes on and on.<sup>14</sup> Obviously this was not the first time that China had poor people, or peasants, or women and families. Neither, clearly, did all of these disparate things suddenly really become problems just at this moment, where before everything had been fine. But it does

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14 A rough sense of this can be gleaned by noting the dates of publication of the first book-length studies of some of these problems: He Xiya 何西亞, *A Study of the Problem of Banditry in China* (中國盜匪問題之研究 *Zhongguo daofei wenti zhi yanjiu*), 1915; Du Junhui 杜君慧, *Lectures on the Woman Question* (婦女問題講話 *Funü wenti jianghua*), 1919; Piaoping jiren 飄萍吉人 (pseud.), *The Problem of the Unemployed* (失業者問題 *Shiyezhe wenti*), 1920; Feng Fei 馮飛, *Introduction to the Labour Problem* (勞動問題概論 *Laodong wenti gailun*), 1920; and Yi Junzuo 易君左, *The Problem of Women's Employment* (婦女職業問題 *Funü zhiye wenti*), 1922. Such a field emerged somewhat earlier in Japan—roughly, between the late 1890s and 1910, when the first discussions of this series of problems, under the general rubric of “the social problem,” took place—through the efforts of social scientists who were powerfully influenced by the sociological innovations of the German Historical School. See, for instance, Kanai Noburu 金井延, *The Social Problem* (社会問題 *Shakai mondai*), 1894; Tomeoka Kōsuke 留岡幸助, *The Charity Problem* (慈善問題 *Jizen mondai*), 1898; the prolific Christian-Democrat Abe Isoo 安部磯雄, *An Approach to the Social Problem* (社会問題解釋法 *Shakai mondai kaishakuho*), 1901; the Christian educator Hani Mokoto 羽仁もと子, *The Family Problem* (家庭問題 *Katei mondai*), 1907; and Kawada Shirō 河田嗣郎, *The Woman Question* (婦人問題 *Fujin mondai*), 1910. The role of Japan as an intermediary in the importation of “Western” knowledge—this concept, I hope, will make less and less sense over the course of the argument—has been well studied; see, for instance, Douglas Reynolds, *China, 1898–1912: The Xinzheng Revolution and Japan*, 1993; Lydia M. Liu, *Translingual Practice: Literature, Culture, and Translated Modernity—China, 1900–1937*, 1995, and *idem.*, ed., *Tokens of Exchange: The Problem of Translation in Global Circulations*, 1999; Michael Lackner, Iwo Amelung, and Joachim Kurtz, *New Terms for New Ideas: Western Knowledge and Lexical Change in Late Imperial China*, 2001; and Joshua Fogel, *The Role of Japan in Liang Qichao's Introduction of Modern Western Civilization to China*, 2004. But it appears that many of the major early figures in the Chinese discourse of social problems drew their inspiration more immediately from American sociology and political economy of the 1900s and 1910s. The latter, in their turn, had been equally powerfully influenced by the German Historical School. I will return in more detail to these and other chains of transmissions often in the following chapters.

represent the almost simultaneous enchaining of all of these things into a common form, the emergence of a space in which they could all be addressed in the same terms, and taken as manifestations of a single underlying problem: that of the social transition to capitalism. The break, then, is to be found in a veritable discursive explosion of social problems.

Each element in this series was immediately related to the others, and one could approach any of them through any of the others. Aspects of the woman problem could be linked to the problem of unemployment, or aspects of the crime problem could be solved by referring them to the peasant problem, and so on. In this respect, they were all formally equal. But there were two which were “universally present elements,” elements which were both *necessarily* included in discussions of any of the others and which together formed a kind of metaset. These were the population and the family. The mutual inscription of the one into the other—their having to do with each other—was not simply one new problem among others. It was the conjunction that, in many respects, by stitching together a new field of governability, made possible the rapid and profound transformation of the basic logic of governing in China. It was in exactly this brief period that the first book-length treatments of the population and the family problems were published in China: *Zhongguo renkou lun* 中國人口論 (*On the Population of China*) by Chen Changheng 陳長蘅 (1891–1987)—about whom we will hear a great deal more in the chapters that follow—in 1918, and *Jiating wenti* 家庭問題 (*The Family Problem*), a series of translations made and compiled by Yi Jiayue 易家鉞 (1899–1972) in 1920. By reading them together—I intend this reading to be more indicative than substantive—we are able to extract a general picture, an image, of the field of governability in terms of which alone does it make sense to speak of a Chinese population.

When *On the Population of China* was first published, Chen Changheng had recently returned from the United States, where in 1917 he attained an MA in Economics from Harvard

University, and was employed as a lecturer in the Economics Department of Beijing University. Chen was the first person to bring to China some of the conceptual tools by which discussion in China on this topic could move toward considering how a country's "vital resources" (生命資料 *shengming ziliao*) could be fitted into a general national-developmental project.<sup>15</sup> The book contains a lengthy discussion of the connections between the population problem and other social problems, but most important for our purposes, between the population problem and types of marriage and family organization. Here, Chen draws on the work of the Columbia University sociologist and economist, Franklin H. Giddings (1855–1931), who determined the principle of the historical evolution of the family on the basis of its more or less efficient production and use of its collective vitality.<sup>16</sup> The earliest stage is the "religious-proprietary family" (同教共產的室家 *tongjiao gongchan de shijia*),<sup>17</sup> in which stifling and "arbitrary" (獨斷 *duduan*) parental control, patriarchy, and an overriding concern for social position decrease the stock of vitality in a family and channel it into useless, non-productive activities. With the emergence of liberalism

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15 Other people brought more of these tools later, of course, and more systematically, but Chen does have the distinction of being the first. In 1914, Zhu Jin 朱進, at the time an economics student at Columbia University, published a pair of essays in the journal of overseas students studying in the US: "Fuguo ce 富國策 (Political Economy)" and "Fuqiang siyi 富強私議 (Private Reflections on Wealth and Power)," 1914; his dissertation from Columbia was published in 1916 as *The Tariff Problem in China*; see Chu, 1916) which contain some of the same ideas, so technically he would be first, but Chen's was the first book-length treatment, and the first that anybody paid attention to. The book's preface is by Cai Yuanpei 蔡元培, founding Chancellor of Beijing University. At Harvard, Chen studied with Thomas Nixon Carver (1865–1961), about whom we will have a great deal more to say. He went on to a long career as a politically-involved intellectual and member of the Nationalist government. He was a founding member of both the Chinese Economics Association (中國經濟學社 *Zhongguo jingjixue she*) in 1923 and the Chinese Statistics Association (中國統計學會 *Zhongguo tongjixue hui*) in 1930, a professor at a wide variety of universities, and a member of the National Government's Legislative Yuan (立法院 *Lifayuan*) from 1928, in all of which capacities he played an important role in training and distributing China's corps of technocratic functionaries. Throughout the 1920s and 30s, he was regularly involved in scholarly debates on the population and related problems (which included almost everything).

16 Chen's source text is clearly Giddings' *The Principles of Sociology*, 1896; see especially the chapters on "The Patronymic Tribe and Folk," 285–298, and "The Liberal–Legal Civilization," 324–360.

17 The 室家 *shijia* here specifies the cohabitating family, the household-as-family, something like the nuclear family as distinguished from the lineage or the extended family.

(自由主義 *ziyou zhuyi*), society moves to the stage of the “romantic family” (愛情室家 *aiqing shijia*). This smaller family form is very good at producing vitality, but due to its detachment from extended networks and uprootedness from social structures, its members tend to be rash and faithless (澆薄 *jiaobo*), easily distracted and prone to anxiety (瞿然 *quran*), and generally dissolute (放蕩 *fangdang*). In short, the Romantic Family is an effective fount of vitality, but lacks any system of control. Such a system emerges with the final stage, the “ethical family” (倫理室家 *lunli shijia*), which combines the production of vitality with its rational management, and which forms the “embryo” (胚胎 *peitai*) of truly civilized life.<sup>18</sup>

Predictably enough, this diachronic trajectory is overlaid with a synchronic class analysis: the large-family system, prevalent among both the traditional, “feudal” elites and the poor, proletarian, and peasant classes, produces too many children, and their children are all lethargic and stupid due to the oppressions they suffer, while the small-family system, that of the modernizing middle classes or bourgeoisie, produces energetic and intelligent children, but too few of them, and they are in danger of wasting their vitality in an excess of freedom. (Family reform, then, was not exactly a project of moralizing the poor, though it was that as well; it began as an effort at self-reform and autocritique by the newly self-identified middle classes.)<sup>19</sup> Thus, the principle of the historical evolution of the family from lower to higher forms is to be found in its increasingly rational or economic self-organization, to the end of a maximally efficacious production of vitality.

Yi Jiayue's *The Family Problem*, turning now to this, is a set of translations from American

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18 Chen, *Zhongguo renkou lun*, 1918: 144–146. The same connection between forms of family organization and efficiencies of vital production is made at almost the same time by Zhou Zhangxian 周長憲 in the journal *Jiating yanjiu* (家庭研究 *Family Research*), founded by Yi Jiayue, in the article “Jiating zhi zuzhi ji shengming 家庭之組織及生命 (The Organization of the Family and Life),” 1922.

19 This is the aspect of this discourse that Susan Glosser focuses on in *Chinese Visions of Family and State, 1910–1953*, 2003.

and French writers on the family.<sup>20</sup> About two thirds of the book is taken from *Sociology and Modern Social Problems*, first published in 1910 by another US sociologist, Charles A. Ellwood (1873–1946). It is well known that there was a good deal of debate in the late nineteenth and early twentieth centuries on the question of the family's origins, and that this formed a part of a much broader general discussion of the family in this period—on its functions, its history, its general forms and varieties, and so on—which doubtless had to do with exactly its repositioning within the general system of social government.<sup>21</sup> According to one school, the temporal origin of the family was situated *within* the timespan of human history: human beings did not always live in families, and came to do so once the “obvious advantages” of that institution (and the equally obvious disadvantages of the state of “primitive promiscuity” in which they had theretofore lived) became clear. Properly speaking, then, according to this view, the family is a human invention. For Ellwood, by contrast, the origin of the family—since it is to be found in

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20 Yi was a student at Beida while he was preparing these translations, during which time he also co-founded the Family Research Association (家庭研究社 *Jiating yanjiu she*) and its shortlived but influential journal, *Family Research* (家庭研究 *Jiating yanjiu*; see n. 18, above). Yi had a less high-level but no less interesting career. He and his colleague Luo Dunwei 羅敦偉 wrote their own treatise on the family in 1921. (See Glosser, “The Truths I Have Learned’: Nationalism, Family Reform, and Male Identity in China’s New Culture Movement, 1915–1923,” 2002, for an extended discussion of the early career and work of Yi Jiayue, approached from a somewhat different perspective than that taken here.) Yi joined the Guomindang in 1924 and after the Northern Expedition was employed in 1928 in the Propaganda Office of the Hunan Provincial Bandit Suppression Office (which really means that he was professionally engaged in justifying the massacres of Communists that were occurring just in this period). Several scholars have tried to recuperate him as a male feminist—there is a case to be made—but his critique of patriarchy is made under the sign of such strong right-wing eugenic principles that I am skeptical. (On the other hand, Margaret Sanger was the same way, at least from the mid-1920s.) In the following, I will cite from Ellwood, except where there are significant divergences in Yi's translation.

21 The corpus of the general discussion is so broad that any attempt to cite its key texts is bound to be arbitrary. Jacques Donzelot's *The Policing of Families*, 1979, remains, to my mind, the best theoretically informed treatment of “the family problem” in this period. Also excellent, though rather less well known in the English speaking world, is Donzelot's *L'invention du social*, 1994. It is easier to cite the basic texts concerning the family's origins. See especially J.J. Bachofen, *Das Mutterrecht*, 1861; J.F. MacLennan's *Primitive Marriage*, 1865; Lewis H. Morgan, *Systems of Consanguinity and Affinity of the Human Family*, 1868, and *idem.*, *Ancient Society*, 1877; Friedrich Engels, *The Origin of the Family, Private Property, and the State*, 1884; E. Westermarck, *The History of Human Marriage*, 1891; and J. Lubbock, *The Origin of Civilization*, 1902. Freud's *Totem and Taboo* (1913) can, in many respects, be seen as a contribution to this debate. All of these texts were discussed and sometimes translated in China in the 1920s.

mammals and especially primates<sup>22</sup>—lies outside the span of human history proper.<sup>23</sup> The human family owes its existence, in biological terms, to the (for simplicity, Spencerian) principle of greater and greater economization of energy over time, and to the need which humans have of caring for their young in order not to incur “the expenditure of such enormous amounts of energy in mere physiological reproduction.”<sup>24</sup>

What then is the family? It is the site of a kind of *primordial economization* that is constitutive of humanity as such: It is the *effect* of an economization that is broader and deeper than humanity itself, and the *site* of an ongoing economization whose refinement defines progress (and thus humanity as an agent and bearer of progress). As such, the family “is almost as much a biological structure as it is a social structure,” and no other social institution occupies exactly this position.<sup>25</sup> In his translation, Yi makes the relationship rather more equitable: “The family is, therefore, both a biological structure and a social structure.”<sup>26</sup> Whence derives the family’s “primary function,” the basic, underlying imperative to which all of its myriad social functions are subordinated: “continuing the life of the species,” or the reproduction of the population.<sup>27</sup>

If, as I suggested above, the general position of the family within strategies of government was changing in just this period, a schematization such as this provides a way to understand or manage the family in the context of the reorganization of the productive activities of society that attend, and in many ways comprise, the “rise of modern industry”:

22 Some writers say birds live in families, others are skeptical.

23 Ellwood, *Sociology and Modern Social Problems*, 1910: 83–84.

24 *Ibid.*, 87.

25 *Ibid.*, 76.

26 Yi Jiayue, *Jiating wenti*, 1920: 3. It bears noting that this formulation is absolutely generic in discussions of the *population*; see, for instance, Chen Da 陳達, *Renkou wenti* 人口問題 (*The Problem of Population*), 1935; Hu Jianmin 胡鑑民, “Renkou bianqian yu shehui bianqian 人口變遷與社會變遷 (Population Change and Social Change)”, 1932; Pan Guangdan 潘光旦, *Renwen shengwuxue luncong* 人文生物學論叢 (*Collected Discussions of Sociobiology*), 1928a, and *idem.*, *Zhongguo zhi jiating wenti* 中國之家庭問題 (*The Problem of the Family in China*), 1928b.

27 Ellwood, *Sociology and Modern Social Problems*, 1910: 76.

[I]t is evident that the family has a very important relation to the industrial activities of society, and industry a very important bearing on the family. Primitively all industry centered on the family, [and] modern industry ... is but an enormous expansion of primitive housekeeping ... The very word *economics* means the science or the art of the household.<sup>28</sup> All that need be said about the delegation of the industrial activities of the family to other industrial institutions is that the movement is not one which need cause any anxiety so long as it does not interfere with the essential function of the family, namely, the birth and rearing of children ... And the removal of industries from the home, even such essential industries as the preparation of food, is to be regarded as a boon if it gives more time to the parents, especially to the mother, for the proper care and bringing up of their children.<sup>29</sup>

Certainly such a perspective, in which the small, nuclear, consuming family is positioned as the pinnacle of social evolution, is subjectively self-serving for the modernizing reformers and social scientists who utilized it. But more importantly (since the fact the some group of people fancies itself better than everybody else does not yet constitute a major problem of social power), it forms a grid of analysis by which to evaluate and find opportunities for reform in *any* family whatsoever, *including* the bourgeois family. Once (the) economy is installed behind the family as such, it is no longer a question of making poor, proletarian, peasant, and feudal families more like middle-class families, *except incidentally*, except insofar as these latter are further along a trajectory on which all families are placed. The family becomes a properly economic problem, both in terms of its internal economy and in terms of its connections to the general social processes of production, exchange, and consumption: Where could economies be found? How could “subsidiary” activities—socialization, education, and food production—be socially redistributed in order to support the family in its really essential role?<sup>30</sup>

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28 *Ibid.*, 79–80. The word “economics” is included in English in Yi’s translation (1920: 8). The Chinese term for economy, 經濟 *jingji*, carries no such etymology.

29 Ellwood, *Sociology and Modern Social Problems*, 1910: 79–80.

30 Leon Rocha at Cambridge University is currently studying those utopian reformers in China, such as Zhang Jingsheng 張競生, who took such a logic to its conclusion, calling for the complete dissolution of the family, given that, if things were arranged correctly, *every* function of the family could be accomplished more efficiently if it were disassembled (the disassembly of the family into a series of analytically separable functions being the key fact here). See, in this connection, Zhang Weici’s “Emancipating Women by Reorganizing the Family,” translated in Lan and Fong, eds., *Women in Republican China: A Sourcebook*, 1999. In Yi Jiayue’s later works, he tends more and more to this position.

We can see that the privileged position of the population in the series of social problems does not derive from the fact that China's population was so enormous, so “obviously” a problem, but from its isolation as a zero level of social problems as such, what all forms of social organization were organizations *of*. The family's privilege derives from its position as the hinge between the biological and the social, the social “in the first degree.” Further, it was impossible to consider one without the other: the family was the immediately given form of the content given by the population. Since it was the primary site of the emergence, cultivation, and disappearance of life (at least in present conditions), it was clear to everybody that if they wanted to act on the population, they had to go through the family. We can see from these texts, then, that from the very start, in China, the population problem is immediately the family problem, and *vice versa*.

To summarize, we have two central phenomena here, neither of which have any correlate in Chinese thought on the family prior to the twentieth century: First, the diachronic and synchronic schematization of family forms according to their differential capacities to produce, cultivate, and distribute vitality; and second, the linking of this “internal economy” of the household immediately to a social division of labour, a general economy. The family and the population are put into relation with economy in two ways simultaneously: first, economy in the “pure” sense of the rational allocation of the factors of production of an enterprise with a view to the maximization of abstract utility,<sup>31</sup> and second, “the” economy in the classical or political-economic sense of the general social processes of production—and, of course, the drive that cathects them all under a capitalist logic, accumulation. If, as I have suggested, the population is the zero level of social problems and the family is the social in the first degree, then economy is both their essential condition of existence and the principle of their articulation with each other.

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31 This will be a central concept in the following chapters.

One need only note at this point the family's position here is completely different than it had been or could have been where the general system of governmental problems was differently organized. The family is thus repositioned by being *imbued with the population*.

Obviously, the publication of two books—however interesting or important they may be—does not constitute a major historical transformation. But my claim is simply that these texts contain all the elements one needs to outline the form of the problem. They give in advance the outline of a formal transformation whose conversion into an *actual* transformation will be the subject of this dissertation. They establish the series of relationships between diverse phenomena and a way of approaching them that would eventually characterize Chinese bourgeois-nationalist governmentality in general—a series that was put in abeyance, certainly, after the defeat of the Guomindang and the formation of the People's Republic. But it did not disappear completely, or at least it reemerged in the late 1970s. Due to the peculiarly decentralized conditions obtaining in China in the first half of the twentieth century, and the simultaneous operation of multiple networks through which knowledge was circulating globally, populationism entered China at a thousand different points. It was not in any sense imposed from above; it was progressively insinuated by a multitude of actors into widely dispersed areas of social life. In the chapters that follow, exhaustiveness is neither possible nor the goal. Rather, by analyzing a few central domains of governing, I wish to show how one domain after another was cathected to a general national-developmental and biopolitical project by way of their reorganization by and in terms of a population–family–economy nexus. What I mean by “nexus” is the series of points at which acting on any one of the elements is already, automatically, acting on and inducing effects in the others.

## TOWARD A HISTORY OF GOVERNMENTAL LOGICS

How shall we explain this? It cannot be explained satisfactorily by changes at the level of society and the economy; such changes, while tremendous, and not *unrelated* to the change that will concern us here, cannot necessarily have produced just this understanding of the population. Nor can it be explained solely by the importation of new ideas (though, again, these undoubtedly played a role), because some of the changes took place at levels of which no clear idea existed.<sup>32</sup> But the rapid and relatively thorough biopoliticization of a social field as broad and dense and that of China is no mean feat. It can't have taken the form of a total transformation of everything. Rather, it took place through the installation of a new “formal-transcendental matrix” within practices of governing.<sup>33</sup> It is a change that takes place at the level of techniques of governing and the systems of knowledge production that accompany them. I will attempt to describe the birth of the Chinese population in terms of *a history of governmental logics*, that is, of changes in the epistemological and institutional forms by which interventions into other people's activities are organized.

But what is a governmental logic? The first thing to note is that this term is intended to reveal a general level of possible historical change, of which the transformation out of which the Chinese population emerges would be a “case.” So, before getting to the case, I should describe this level in its generality. We can approach it by way of a series of questions, which have the considerable advantage, I claim, of being askable of either side of a given change over time.

1. What are the criteria according to which a given intervention can be evaluated as successful or unsuccessful?
2. What effects are meant to be induced in a given social field by the activity of governing?

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32 We will see in Chapter Four how this is true even of the central term itself: life.

33 On the notion of a formal-transcendental matrix, see Žižek, “Against the Populist Temptation,” 2006: 567.

3. What are the elements of the field of governability to which a given kind of governing refers? That is, what is on the agenda of government? What are the pertinent realities or variables, through or in terms of which one is compelled to act? Further, what specific relation is established between the activity of governing and the set of things to be governed?
4. How are they related to one another? How is their reciprocal organization taken into account?
5. What effects of social order or of economic reproduction are seen to be induced by good administration, and what ills are generated by corruptions or failures of practice?
6. What is the general relationship between social order and good government?

I will suggest a series of initial answers to some of these questions, not at all in order to settle them once and for all, nor to indicate that they are easily answered, but in order to give the reader a sense of the method I employ in this dissertation. The shift from one set of answers to another defines the level at which the analysis will proceed; retracing the process by which one set of answers is replaced by another, then, constitutes the history itself.

Schematically, then: For late imperial statecraft, what was sought was to maintain the conditions of normal production and to reproduce a given social order; to the degree that particular measures did this (which was always a matter of debate), they would be interpreted as successful.<sup>34</sup> For the political-economic form of governing with whose history I will be concerned here, on the other hand, the goal is to produce the possibility of economic growth, and to direct and channel the resulting social *disorder* in a structural and constant manner (which is not at all the same thing as reproducing a social order). In terms of the field of governable

<sup>34</sup> The activities of, in particular, the Qing state prior to the mid-nineteenth century in attempting to maintain the conditions for an ideal type of normal production have been well covered in, among other works, Pierre-Étienne Will, *Bureaucracy and Famine in Eighteenth-Century China*, 1990; Will and R. Bin Wong, *Nourish the People: The State Civilian Granary System in China, 1650–1850*, 1991; Peter Perdue, *Exhausting the Earth: State and Peasant in Hunan, 1500–1850*, 1987; R. Bin Wong, *China Transformed*, 1997a: 105–126 *et passim*; and Lillian M. Li, *Fighting Famine in North China: State, Market, and Environmental Decline*, 2007. In *The Making of a Hinterland* (1993) and in a variety of recent works, Kenneth Pomeranz has made the difference between late imperial statecraft and political-economic governing at this level—the transition between which occurs in exactly the period covered by this dissertation—very clear, though his focus is on governing an economy, rather than a society. For a valuable summary of late imperial governmental activities designed to reproduce a social order, see R. Bin Wong, “Confucian Agendas for Material and Ideological Control in Modern China,” 1997b.

objects, we might take our example from the realm of law. In late imperial Chinese law, the “positive terms” (if we can call them that) were the concentric degrees of proximity or distance of relationship. There was no abstract “subject of law,” whose rights and duties derived from a universal and formal predication of “Man”; every obligation and reciprocity depended on one's position within a series of hierarchies and lateral relations, the terms of which are given by degrees of mourning obligation (kinship) and statutorily defined rank relations (such as master and servant). By contrast, the new legal codes that began to be introduced into China in the twentieth century—first under the Qing in 1908 and culminating in the *Civil Code of the Republic of China* (中華民國民法 *Zhonghua minguo minfa*) promulgated on May 23, 1929, both of which were modelled in the German Civil Code of 1900—begin with a predication of “Natural Man” (自然人 *ziran ren*) and proceed to derive from that predication the universe of legal facts. The foundation of one's inclusion in a structure of legal relationships is the fact of being a person, and this fundamentally restructures the field of objects in terms of which legal governing must operate.<sup>35</sup> Within the horizon of late imperial statecraft, the family was one element in an ascending series of orderable domains, and the effects of poor governance in any one of them could ripple outward to infect the others in either direction.<sup>36</sup> In the twentieth

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35 For useful materials on the jurisprudential aspects of this change, see Jérôme Bourgon, “Shen Jiaben (1840–1913) et le droit chinois à la fin des Qing,” 1994; *idem.*, “Uncivil Dialogue: Law and Custom did not Merge into Civil Law under the Qing,” 2002; and *idem.*, “Rights, Freedoms, and Customs in the Making of Chinese Civil Law, 1900–1936,” 2004. I have benefitted greatly from conversations with Jérôme Bourgon on these matters. For an English translation of the *Civil Code* of 1929, see Hsia Ching-lin, et al., 1931. The original text can be found in Zhongguo di'er lishi dang'anguan, *Zhonghua minguo shi dang'an ziliao huibian* 中華民國史檔案資料匯編 (*Compilation of Archival Materials on Republican History*), 1999: 317–459.

36 Ultimately, I suggest, this derives from the schematization of the interconnectedness of a scalar series of domains to be found in *The Great Learning* (大學 *Da Xue*), which set the general parameters and form of governmental thought from its canonization in the Southern Song dynasty: “Only when things are investigated is knowledge extended; only when knowledge is extended can our thoughts be sincere; only when our thoughts are sincere our minds be rectified; only when our minds are rectified can we cultivate ourselves; only when we have cultivated ourselves can our families be regulated; only when our families are regulated can our states be well governed; and only when our states are well governed can All Under Heaven be pacified” (Chan, *A Source Book in Chinese Philosophy*, 1969: 86–87, translation modified).

century, as I've suggested, the family is repositioned *vis-à-vis* other social-organizational forms, becoming rather a central point of exchange between the natural-biological domain and the social-political domain. In the statecraft tradition, social order is the *effect* of a ceaseless activity of governing; if governing disappeared, the possibility of social order would disappear with it. For political economy, a preexistent social order is imagined to be recognized, registered, taken account of, and (if they are to be successful) respected by practices of governing; governing as a specialized activity could disappear and social order would remain.<sup>37</sup>

Thus, if one wants to define a form of governing, as opposed to a political theory or an ideology, one should not look to the explicit principles according to which it understands or limits itself, or how it differentiates itself from other species of its own genus. One should look instead to the relationships it addresses and which organize its activities. One should look to what it makes immanent to what else. These questions have little to do with the standard questions asked by liberal and conservative (or Marxist, for that matter) theories of social power: What justifies it? What are the bounds beyond which it cannot pass without thereby becoming “illegitimate” and tyrannical? We also cannot accept as our terms of reference the pre-given terms the permutations of whose relations political theory studies, such as the subject (whether legally or culturally defined), the individual, the family, the community, society, the nation, or the state. Sometimes governmental practices take these terms as given, and sometimes they don't. The history of a form of government will be tied not to a particular set of political or social universals but to a field of governability, which I must now define.<sup>38</sup>

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37 This is linked historically to the emergence, right in the same period as political economy and as part of the same transformation, of the concept of “civil society” as a transhistorical constant within a liberal analytics of power. (On this, see Foucault, *The Birth of Biopolitics*, 2008: 291–316.) It is essential to note that this civil society is not at all the same thing as the “society” that is the bearer and site of “social problems.” This latter category really only came into existence at the end of the nineteenth century, through a process much like the one I will try to describe herein; see Gilles Deleuze's Foreword to Donzelot, *The Policing of Families*, 1979: ix–xviii.

38 I do not mean “governability” as an idiosyncratic translation of Foucault's term *gouvernementalité*, for which the established “governmentality” is perfectly adequate. By this term I mean to indicate a field

## FIELDS OF GOVERNABILITY

天下惟器而已矣

The world consists solely of apparatuses.

— Wang Fuzhi (1619–1692)

A good deal of Michel Foucault's work (not all of it, to be sure, but certainly his work in the 1970s) can be characterized as the specification of these fields of governability, and the description of the historical conditions of their emergence and transformation, a field being something like a charged space in which a number of elements coexist in such a manner that an action performed on any one of them affects all of the others: by acting on any element, one adjusts the coordinates of the whole system that is thereby defined. The purpose of the kind of specifically governmental reflection that Foucault is trying to isolate and describe in these studies, then, would be to organize interventions in such a way that one can distribute effects through an entire field by the rational, reflected deployment of measures which would take the reciprocal organization of its elements into account. The most famous of Foucault's studies along these lines is the first volume of *The History of Sexuality*, and sexuality is as good an example as any of the kind of activity that pertains to a field of governability. It is not unrelated, either theoretically or historically, to the topic of the present dissertation.

We misconstrue Foucault's analysis of sexuality if we take it, in the first instance, as an object; it exists first as a field in which objects are in relation with each other. The order of derivation is important: It is not the case that sexuality was what “enabled” women's bodies, children's sexual practices, marriage and reproduction, and the perversions—to take Foucault's examples—to be drawn together onto a common terrain. On the contrary, it was the drawing

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constituted by the governability of its elements, be they objects, sets of objects, or relationships. That is, such a field exists in virtue of the strategic intent on the part of one who governs—the nature of this one being indeterminate—to adjust the field toward the attainment of a given goal. As soon as this strategic intent disappears or changes, so too does the corresponding field of governability. See immediately below for some examples of this term.

together of these elements through techniques of governing and knowledges devoted to quite other ends and quite different objects that produced this new thing, sexuality. At a first pass, then, sexuality would be the field in reference to which it becomes possible to say that any modulation or fluctuation in any one of women's bodies, children's sexual practices, marriage and reproduction, or the perversions instantly and immediately redounds upon the others. It is formed as their common substance, what makes them all “have to do with each other.”

Families, according to Foucault, played a very precise role in the constitution of this field in the eighteenth and nineteenth centuries in Europe and America. They were central sites of elaboration for the tactics and interventions that brought about the tendential shift from an axiomatics of alliance to an axiomatics of sexuality. As Foucault puts it:

The family cell, in the form in which it came to be valued in the course of the eighteenth century, made it possible for the main elements in the deployment of sexuality [the aforementioned] to develop along its two primary dimensions: the husband–wife axis and the parents–children axis.<sup>39</sup>

A variety of knowledges and interventions came to be arrayed along each of these axes. This kind of family drew a whole series of disparate problems into its orbit, and this new orbit formed the condition, the “historical *a priori*,”<sup>40</sup> of the emergence of something called sexuality: “Sexuality’ was taking shape, born of a technology of power that was originally focused on alliance.”<sup>41</sup> It only became an object, strictly speaking, with a knowledge and a practice of governing specific to itself, quite late: roughly, the 1870s,<sup>42</sup> which would be the point at which a possible object of a science “crosse[d] the threshold of epistemologization,” as Foucault puts it in *The Archaeology of Knowledge*.<sup>43</sup> We could imagine this as a transition from ground to figure, a process of the formation of the objects of sciences by a curvature of social space induced by

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39 Foucault, *The History of Sexuality, Volume I*, 1990: 108.

40 Foucault, *The Archaeology of Knowledge and The Discourse on Language*, 1972: 142.

41 Foucault, *The History of Sexuality*, 1990: 108.

42 The centrality of this decade to the transformations I am describing in this dissertation will become clear as I proceed.

43 Foucault, *The Archaeology of Knowledge*, 1972: 190.

the collective action of technologies of knowledge and governing, and this curvature occurs through and on the basis of the instrumentalization of the family in a variety of ways.

In his lecture course at the Collège de France in 1978, published recently as *Security, Territory, Population*, Foucault outlines a similar history of the population. (Again, this will not be unrelated to China in the early twentieth century.) We know that historically, in the major European languages, “population” designated the process of populating a place before “the” population was the name of an object.<sup>44</sup> For it to become an object, a very particular series of transformations have already to have occurred. The Physiocrats, for instance, in relation to the grain trade—here I am summarizing the first several lectures—have already to have resituated the fundamental activity of government at the level of “needs” (*besoins*), and the basic level of its articulation at that of production and the labour process rather than that of exchange.<sup>45</sup> In another area, the town or the city—with its *circulations* and *desires*—has to have displaced the feudal territory with its *fixity* and *obligations* as a “primary problem” of governmental reflection.<sup>46</sup> In addition, certain technical innovations have already to have been developed around contagion, illness, and death: mortality tables, vaccination, discoveries in probability and actuarial mathematics, and so on.<sup>47</sup> None of these problems—of “the town, scarcity, and

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44 The Chinese term 人口 *renkou* does not appear to have been used to translate “population” before 1900; the late imperial administrative category of *hukou* has a very different meaning (see n. 6, above).

45 For an excellent discussion of the Physiocrats in precisely this connection, and in relation to the emergence of “the economy” as an object of government, see Rosanvallon, *Le capitalisme utopique*, 1979: 34–62. (Especially interesting is Rosanvallon's discussion of the role of Quesnay's interpretation of the nature of the Chinese emperorship in the development of his theories.) It is worth noting that Marx, in *Theories of Surplus Value*, also describes the Physiocrats as occupying an absolutely central transitional position: “The analysis of *capital*, within the bourgeois horizon, is essentially the work of the Physiocrats. It is this service that makes them the true fathers of modern political economy. In the first place, the analysis of the various *material components* in which capital exists and into which it resolves itself in the course of the labour-process ... The Physiocrats transferred the inquiry into the origin of surplus-value from the sphere of circulation into the sphere of direct production, and thereby laid the foundation for the analysis of capitalist production” (Marx, *Theories of Surplus Value*, 1978b: 222, emphasis in original).

46 Foucault, *Security, Territory, Population*, 2007: 64.

47 The history of statistics is, of course, the the subject of a substantial scholarly literature. Ian Hacking's work (especially *The Emergence of Probability*, 1975 and *The Taming of Chance*, 1990) has been very

epidemics” (and risk)—developed with explicit reference to the population, but collectively they produced the curvature in the social and epistemic field by which “the” population could make such a “remarkable entrance” into political and economic reflection in the second half of the eighteenth century, an entry that is widely noted at the time.<sup>48</sup> In the first instance, then, population is the field in which taxation, migration, trade and the circulation of goods and currency, the relative importance of economic sectors, city design and urban planning, policy, illness, and a host of other phenomena are conjoined to each other:

The population is therefore everything that extends from biological rootedness through the species up to the surface that gives one a hold provided by the public. From the species to the public; we have here a *field* of new realities in the sense that they are pertinent elements for mechanisms of power, the pertinent space within which and regarding which one must act.<sup>49</sup>

In a schematic way, then, this is what I mean by a field of governability. With this in the background, then, we can move to our real topic: the formation of just such a field of governability in China, the carving out, for the first time there, of a series of relationships between family forms, demographic phenomena, and a national economy—a series of relationships that defines a certain moment in the development of what I think we can call a capitalist world-episteme. With reference to the definition in China of a nexus of immanence involving the population, the family, and the economy, I suggest, I can not only cast the history

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useful in fleshing out some of Foucault's claims, historically speaking, and in tracking the development of important related aspects of modern governmental knowledge. The transition in the nineteenth century from amateur science toward systematic vital statistical work is the subject of Andrea Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France*, 2002, while the history of the incorporation of these techniques into large-scale, state-centric systems, and the transformations that are wrought by that relocation, have been covered in works like Theodore M. Porter, *The Rise of Statistical Thinking, 1820–1900*, 1986; Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning*, 1998; and Libby Schweber, *Disciplining Statistics: Demography and Vital Statistics in France and England, 1830–1885*, 2006.

48 Foucault, *Security, Territory, Population*, 2007: 67.

49 *Ibid.*, 75, emphasis added. Further, biopolitics—which, for Foucault, is the specific form of power that arises from these developments (which distinguishes it from a number of other current usages of this term)—“will derive its knowledge from, and define its *field of intervention* in terms of: the birth rate, the mortality rate, various biological disabilities, and the effects of the environment” (2003: 245, emphasis added).

of China in this period in a new light, but I can also go some way toward a general characterization of capitalist governmentality in the early twentieth century.

Thus, the goal is not to track the development of understandings or ideas of the population, nor their progressive approximation to some notion of population that we might recognize as scientific or “within the true.” Hence, the corpus that is defined by this problem cannot be limited to those texts and debates in which it was immediately or explicitly thematized. One would hardly do justice to the importance of the problem by studying the texts of those who might be considered population experts (though naturally one can hardly ignore them). The goal, rather, is to investigate the transformations introduced into a wide variety of governing practices by the installation of the population in them. In a sense, then, my purpose is to determine the corpus that would be the trace and effect, the body, of the *apparatus*<sup>50</sup> of population management in Republican China. The problem is not “What did this or that person or group of people think or do about the population?” but “What apparatus must have come to exist, such that this corpus exists?” The approach taken, then, is quite close to what Foucault, in *The Archaeology of Knowledge*, calls “the analysis of the *episteme*.”<sup>51</sup> There, in the process of differentiating his own approach from that of others concerned with the history of knowledge, he describes an *episteme* as

the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems ... The episteme is not a form of knowledge (*connaissance*) or type of rationality which, crossing the boundaries of the most varied sciences, manifests the sovereign unity of a subject, a spirit, or a period; it is the totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities ... [I]t is what, in the positivity of discursive practices, makes possible the existence of epistemological figures and sciences ... In the enigma of scientific discourse, what the analysis of the episteme questions is not its right to be a science, but the fact that it exists.<sup>52</sup>

The episteme, therefore, is a descriptive artefact of a given configuration of knowledges,

50 I discuss this term immediately below.

51 Foucault, *The Archaeology of Knowledge*, 1972: 193.

52 *Ibid.*, 192.

institutions, practices, and strategies, a specific and historical system on the basis of which it is not just possible but necessary that certain objects appear (such as a population in China). How, then, are such configurations put together? In the early 1970s, Foucault shifted his point of analysis from the specification of epistemes to the description of apparatuses (*dispositifs*), these latter being the historical systems on the basis of which it is possible to describe the appearances and disappearances, shifts and displacements, of epistemes and the objects and fields they involve.<sup>53</sup> In an interview conducted soon after the publication of the first volume of *The History of Sexuality*, Foucault describes an apparatus as

a thoroughly heterogeneous set consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral, and philanthropic propositions ... Such are the elements of the apparatus. The apparatus itself is the network that can be established between these elements ... [T]he nature of an apparatus is essentially strategic, which means that we are speaking about a certain manipulation of relations of forces, of a relational and concrete intervention in the relations of forces, either so as to develop them in a certain direction, or to block them, to stabilize them, and to utilize them. The apparatus is thus always inscribed into a play of power, but it is also always linked to certain limits of knowledge that arise from it and, to an equal degree, condition it. [It is] a set of strategies of the relations of force supporting, and supported by, certain types of knowledge.<sup>54</sup>

An apparatus, then, produces, and unfolds in relation to, a field of governability, which in turn is a set of things to be governed, and a set of relationships determined to be operative between them, organized by a given set of intended effects and strategies, and a way of being related or relating oneself—on the part of the one who governs—to this set so that these effects can be induced.

At a formal level, we can approach this from another direction. In a commentary on the external chapters of the *Yijing* 易經—the same commentary that provides the rather striking epigraph to this section—the seventeenth century philosopher and historian Wang Fuzhi 王夫之

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53 This shift is rather better known as the shift from archaeology to genealogy; there is a significant specialist literature about its nature and consequences, which I will not delve into here.

54 Foucault, *Power/Knowledge*, 1980: 192–194.

discusses the relationship between the Way (道 *dao*), or a Way (which might correspond to a logic, as I am using that term here), the activity of ordering (治 *zhi*), and the instruments (器 *qi*) of rule in a manner very reminiscent of Foucault's work:

Not yet having both bows and arrows, there can be no Way of archery; not yet having both vehicles and horses, there can be no Way of charioteering. If there is not already sacrificial wine (牢醴 *laoli*), ceremonial currency (璧幣 *bibi*), 鐘磬 *zhongqing*,<sup>55</sup> and 管絃 *guan hong*,<sup>56</sup> there can be no Way of Rites and Music. Without yet having a son, there is no Way of being a father, and without yet having a younger brother, there is no Way of being an elder brother. The ways of possessing and failing to possess the Way are manifold. Thus, if one lacks an apparatus (器 *qi*)<sup>57</sup> one lacks a Way as well ... Thus the ancient sages could order apparatuses (治器 *zhi qi*), but they could not order the Way (治道 *zhi dao*). What is called a Way is the ordering of apparatuses. What is called virtue or efficacy (德 *de*) is the achievement of a Way. What is called putting into effect (行 *xing*) is the completion of apparatuses. The breadth of the utility of apparatuses is what is called their transformability and flexibility (變通 *biantong*). What is called an undertaking (事業 *shiyè*) is the manifesting of the effectivity of apparatuses ... Thus, for the sage, seeing to the benefit (善 *shan*) of the people consists solely of ordering apparatuses.<sup>58</sup>

A Way, then, follows upon and is a function of the establishment of an apparatus. It is the effect of the putting into relation of concrete things, rather than what generates them. (As though the Way of archery generated bows and arrows; on the contrary, it is only once there are bows and arrows that there can be a Way of archery, which can then reflexively redound upon the formation of particular bows and arrows. If there were no bows and arrows, in what would the Way of archery consist?)<sup>59</sup>

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55 An ancient ceremonial musical instrument.

56 Another instrument, made of bound pipes.

57 The more usual translation of this term is “instrument”, “machine,” or “organ.” Thus, a 武器 *wuqi* is a weapon (lit. an instrument of war) and 電器 *dianqi* refers to electrical equipment in general. But in the sense of a machinery that makes it possible to act in a particular way, it is like an apparatus in the Foucauldian sense; hence the present translation.

58 Wang, *Zhou-Yi waichuan*, 45a–b.

59 I will return to this notion of government in greater detail in Chapter Three. I am indebted here to the studies of Wang by François Jullien (*Procès ou création: une introduction à la pensée des lettrés chinois*, 1989; *Figures de l'immanence: Pour un lecture philosophique de Yi king*, 1993; and *The Propensity of Things: Toward a History of Efficacy in China*, 1995) and Jacques Gernet, *La raison des choses: Essai sur la philosophie de Wang Fuzhi (1619–1692)*, 2005, even though they disagree with each other, and even though I do not think (as Jullien apparently does) that this authorizes a general schematization of “the Chinese way of thinking.”

By the early twentieth century, of course, the population had already crossed the threshold of epistemologization, in the sense that it had already, by the time anyone in China took notice of the governmental technologies that gave birth to it, emerged from out of their collective operation and had been reflexively put to work within them, and it traveled along with them. In fact, the first iteration of the population problem in China occurred *before* the installation of its particular apparatus. It is usually assumed that if a new notion becomes intelligible to a group of people operating within a horizon that does not at first include the conditions for it, this change must take place at the level of a series of realizations or translations, by which the new is at first encoded in the terms of the old. To this assumption corresponds such questions as: How did Chinese people “get it”? Through what cognitive operations was the epistemological space for such a notion produced? One then looks to translations, debates, and so on, for evidence of a gradual approximation or convergence toward the modern. Once they get it, they proceed to reorganize their activities accordingly. Such will not be the approach taken here. The discussion of the population in the first decade of the twentieth century had *something* to do with biopolitics (but what exactly is not obvious), but however far these discussions may have taken their participants toward an apprehension of the biopolitical, what happened in the 1910s and 1920s was not due to them. I will argue that the conditions of the biopolitical in China were established by transformations in areas that did not have anything explicitly to do with these earlier discussions. The formation of the epistemological conditions of there being a Chinese population that appears as such to Chinese people does not precede its installation into the grain of governmental activity in China. Things become objects of knowledge not because internal or external obstacles to perceiving them are removed, but because of modulations in the positive order of knowledges. I am dealing here not with a process of bringing into the order of knowledge an object that had previously lain outside it, but with the replacement of one order of

knowledge by another.

### CAPITAL AND CAPITALIST GOVERNMENTALITY

A population is, as Marx points out in the *Grundrisse*, “an abstraction.” Specifically, an abstraction from “the classes of which it is composed. These classes in turn are an empty phrase if I am not familiar with the elements on which they rest. E.g. wage labour, capital, etc.”<sup>60</sup> Little is gained by *simply* pointing this out, though. Even if it is granted that, by being abstract, the population is somehow not real, we still have a tremendous edifice of entirely real social phenomena that are concerned with it. There are two very different ideas about the role of abstraction in thought, and by extension in historical explanation, and if this project trafficks in the abstract, it will be important to be clear about which one I mean. The first and more familiar one—clearly, then, the one I will not be using—holds that the abstract is formed by the progressive removal of the concrete. Abstraction signifies a process of progressive subsumption of more and more particulars under a general form or summarizing idea. In this figuration, the abstract and the concrete are two poles, and as one approaches one, one moves away from the other. The more abstract something is, the more removed it is from the concrete, and it is better to stick as close as possible to the concrete. But there is another, more dialectical notion of abstraction, in which the abstract is “written into” the very grain of the concrete, and always at work within it. Take money, for instance. Nothing can be more abstract than money (except value, which it represents), and yet it is impossible to get through the most concrete activities of daily life without it. And value, to the notion of which we now turn, is yet another step more abstract, but the whole system of capitalist governmentality that will form our object in the following chapters is organized around it. Once the abstract dimension of things governs their

<sup>60</sup> Marx, *Grundrisse*, 1973: 100. Note the very precise relationship here: the classes of a capitalist society *rest on* the forms of economic relationships, rather than these forms constituting instruments in the hands of the different classes.

interactions (as it does in the case of monetized exchange), one can say that the abstract really, in fact, generates the concrete, and that the concrete is no longer explicable without it.<sup>61</sup>

Marx's theory of value is one of the most difficult elements of his analysis of capitalism. Whole schools and tendencies within Marxism have differentiated themselves from each other over their interpretations of it.<sup>62</sup> With any luck, we will be able to avoid entering into the arcana of this debate—it would be of little interest to most historians in any case—but some understanding of value is necessary if we are to proceed with an investigation of capitalist governmentality, which is centrally, even entirely, concerned with it. “The wealth,” then, “of societies in which the capitalist mode of production prevails appears as an 'immense collection of commodities',”<sup>63</sup> the essential property of each of which is its value. Value is what constitutes the general exchangeability in virtue of which alone it is a commodity in the first place, a constituent of “wealth in general,” as opposed to a mere useful article. Where before value had served as a *measure* of wealth, here value is introjected into the very definition of wealth: In order that something may be counted as wealth, it *must* be a commodity; insofar as it is a commodity, it is wealth, and *vice versa*. It is the property by which *any* material particular can be equated to any other, without thereby forming an dissociable property of any actual particular. Value cannot be detached from a thing like a “part.” Further, at no point is value (or capital as self-valorizing value) identifiable with any of the forms that it recursively takes—not even, or even especially not, money, quantities of which is how it appears in capitalist cost

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61 Of course, in Republican China, it *was* possible to conduct a significant portion of one's daily activities without the use of money. But, as we will see in Chapter Five, this was a major *problem* for economic reformers at the time. The forms of knowledge by which they proceeded *presupposed* universal monetization, which presented all kinds of problems of transcoding: the calculation of wage-equivalents, book values of articles, and so on.

62 This debate has turned on questions like: Is the law of value universal, or specifically a feature of the capitalist mode of production? Is it something on the conceptual basis of which socialist demands might be made, or is it part of the problem? What is its relation to labour? I will return to this in greater detail in the Conclusion.

63 Marx, *Capital, Volume I*, 1990: 125. This is the first sentence of that work.

accounting.<sup>64</sup>

We can see this by noting a simple fact about all the symbolic formulae for the circulations of capital given by Marx in the second volume of *Capital*: capital itself never appears in them.  $M$  and  $M'$  (money),  $P$  (production),  $C$  and  $C'$  (commodities),  $L$  (labour-power),  $mp$  (means of production)—all of these forms of value are only “evanescent moments” of capital,<sup>65</sup> which exists (but does not appear in any phenomenal form) only in virtue of their enchainment in a particular process (“value in process, money in process, and, as such, capital”).<sup>66</sup> The first thing to do, then, is to dispense with the idea that Marx's analysis of capital is “materialist” in the sense in which this term is usually understood, and not just by non-Marxists: the sense in which everything is “really” concrete, and abstraction carries with it the taint of idealism, supposedly materialism's great enemy. Capital consists, in the first instance, of value, a feature that “no chemist has ever been able to isolate” among the material properties of anything.<sup>67</sup> Marx's analysis of capital is not concretizing, in the sense of revealing that what is understood to be abstract is “really” concrete. It is the exact opposite: in the commodity, what appears as entirely concrete—a useful article—is, insofar as it is capital, shot through with value and its universe, the market. Capital, as Deleuze and Guattari have it, is “the abstract as such.”<sup>68</sup>

We have then also to dispense with the idea that the labour referred to in the much-abused “labour theory of value” is actual or concrete labour. Marx never actually says this, and if he did, his theory of value would deserve its reputation. As it stands, though, it does not. What Marx actually says is that what determines the value of a commodity, “on average and in the long term,” is the *average socially-necessary labour time* required to produce it within a given

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64 This relies on the distinction between money of account and money as means of exchange. Money, then, appears in two ways on a balance sheet: as itself (“cash on hand”), and as the measure of everything else.

65 Marx, *Grundrisse*, 1978: 142. It is “real,” then, in the way that a Way is real for Wang Fuzhi.

66 Marx, *Capital I*, 1990: 173.

67 *Ibid.*, 177.

68 Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, 1983: 261.

economic formation (which makes his analysis useless to anyone concerned with *a* capital over a short period—say, an annual accounting cycle). The form of the commodity, its combination of use-value (a set of actual properties) and value (an abstract quantity of an undifferentiated substance), links it, this “cell,” immediately to the global market by reference to which alone such an average can be discovered. Its value, supposedly interior to itself, is a complex function of its position within the world market, the global division of labour and the extent of the latter's systematization, at a particular point in time. Thus—this is a crucial point—the value of any particular commodity is determinable only by immediate reference to the whole universe of commodities, to the whole global field of capital that, in virtue of its form, it contains within itself, as a fetish. This is how the commodity both presupposes and constitutes not just this or that market, or even the global market, but the market as such, the universe of the commodity.

We know, or at least most of us are prepared to entertain the possibility, that capitalist production is unique among all forms of production in the sense that it is undertaken *for* value, with exchange value already in view at the beginning: that is, it begins and ends in the abstract, with the concrete serving merely as its bearer. As Marx puts it, as far as capital is concerned, the capitalist, “or rather his pocket,” is just “the point from which the money starts and to which it returns.” The capitalist is “capital personified and endowed with consciousness and a will.”<sup>69</sup> In this way, capitalist production is at the same time the production of things for the satisfaction of needs *and* the production of the abstract. One can thereby formulate an answer to a possible objection: Surely you are overstating the discontinuity, a discontinuity that, in any case, a whole scholarly literature has dedicated itself to stitching over. Surely capitalism is just the latest system—and the most efficient one—for the satisfaction of wants and needs, this last process being the definitive characteristic of forms of economic organization as such, of which genus

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69 Marx, *Capital I*, 1990: 170.

capitalism would then be a species. In the light of the above, one might go so far as to suggest that this conception of economic activity (one which was only formalized *within* capitalism) is true of every mode of production *except* capitalism. In capitalism, the satisfaction of needs is instrumentalized in relation to the expansion of value. For capital, the satisfaction of particular needs is merely the means (and not even always the most felicitous means) for the accumulation of value—which is, according to the marginalist conception, satisfaction *in general*.<sup>70</sup>

I am aware, of course, that the universal category of choice in historical explanation these days is modernity, not capital. The above, though, puts us in a position to venture a claim about the relationship between these two terms that is, to my mind, more useful than either pole in the endless barrage of discussions about which is “deeper” or which one drives the other. Clearly I cannot hope to put a stop to this debate; it is too deeply engrained and too many people are invested in one answer or the other. Although I have my preference, all I wish to do here is to describe how I will put them into relation in this dissertation. That claim is: the modern is the *form* or *apparatus* of capital. This does not mean that “behind” the modern, the “real” motive force is capital, dissimulating itself into so many deceptions. Rather, capital exists *as* the modern. The modern is the form of life that results from the forms of social organization having been recoded as elements in a process of accumulation, from their being made tendentially to approximate to the optimal conditions for the accumulation of capital. Likewise, modernization would be the process of recoding. The modern provides the form in which capital can exist—that is, without which it would have no body, just as capital becomes the substance that the modern is comprised of. This is not to suggest that capital is—it is even less to suggest that *capitalists* are—the ultimate mover behind modernity.<sup>71</sup> Rather, capital is the universal *in* the

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70 This explains the oft-wondered at fact that commodities (surplus agricultural production in one country, for instance) that would satisfy perfectly real needs (starvation in another country) will be destroyed before they will be distributed in such a way as to block the further accumulation of value.

71 Although this claim should not be dismissed too hastily. One need only think of how quickly this or that cultural form will be jettisoned if it acts as hindrance to this accumulation, and of how cultural

particular, the “stuff” of the modern. To put it in Foucauldian terms, the modern plays a directly productive role *vis-à-vis* capital. The population (whether of China or as such) is, I suggest, exactly this kind of abstraction,<sup>72</sup> one that exists in virtue of a given form of practice and knowledge. But it is not, for that, unreal: it really structures the concrete from within.

One of the most important products of the process of capital, and one whose importance to our present concerns cannot be overstated, is the notion of labour-power, the abstract capacity to produce, analytically separable from any determinate act or kind of production. That is, capital *produces* labour-power—one abstraction to match another: just as capital is constituted by the abstraction of value as such from any particular material embodiment, so too is labour-power constituted by the abstraction of a capacity from any particular form of work.<sup>73</sup> In doing so, it produces the population, which is, as I will argue in greater detail later, the general level of the human, human collectivity stripped of any particular social characteristic: prior to the family, to the *ethnos*, to the nation, the population concerns those features that may be predicated of any human being whatever, as a living being. The population appears within capitalist governmentality (and this is, after all, its first historical appearance) as the material bearer of this labour-power. We know—it has been said a million times—that the commodification of labour-power is one of the defining features of capitalism. Less often noticed is the fact that the

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practices must, it seems, find their justification in their rationality before they can be justified on solely cultural grounds.

72 As is, for that matter, “the” family.

73 The development of the science of abstract work has been admirably treated in M. Norton Wise, “Work and Waste: Political Economy and Natural Philosophy in Nineteenth-Century Britain,” 1989a (Part I) and 1989b (Part II)—I will return to this question in Chapter Five; for an excellent cultural history of the science of fatigue—the negative of the capacity to work—see Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, 1992; Sean H.L. Lei has written a fascinating study of the transcoding of traditional Chinese disease categories in the 1920s, such that diseases which had been understood to be the result of overwork came to be understood in terms of a subjective inability to endure work: see Lei, “Weisheng weihe bushi baowei shenging? Minguo shiqi de bielei de weisheng, ziwo yu jibing 衛生為何不是保衛生命? 民國時期的另類的衛生, 自我與疾病 (Why *Weisheng* is Not about Guarding Life: Alternative Conceptions of Hygiene, Self, and Disease in Republican China),” 2008, and “Why *Weisheng* is Not about Guarding Life: Alternative Conceptions of Hygiene, Self, and Disease in Republican China,” 2009.

very notion of labour-power only arises, and can only arise, as always-already commodified.<sup>74</sup>

And even less often noticed is the argument I will make: that the population is conjured into existence as a correlate of this development.<sup>75</sup>

If then, as Gayatri Spivak says, capital “decodes and deterritorializes the socius by releasing the abstract as such,”<sup>76</sup> capital is not a “part” of any social formation. On the contrary, it is a kind of *anti*-social formation. It is not, therefore, an instrument in the hands of a European or Western bourgeoisie; Europe is just the place with the first historical experience of the abstract as such, i.e., capital. Capital is, rather, a formal-transcendental matrix that can be installed as easily (or with as much difficulty) in one social formation as in any other, all while leaving things, at first, and on a phenomenal level, much as they were before. In this sense (not in all senses), it *doesn't matter* what kind of social formation existed “before.” Capital is not the emanation of any particular culture. It did not arise organically from, and nor does it maintain any necessary connection to, “Western” cultural forms or trajectories.

Thus, what I mean by capitalist governmentality (this would be my technical definition) is: that form of governing which approaches material particulars in terms of the adjustments that can be made to them so that they enter into the best possible relationship with the requirements of the accumulation of value in the abstract. That is, it works with the particular and the concrete (in this case, the field of Chinese social life as it has been produced historically) by way of their involvement in the processes that generate capital. Capitalist governmentality works at two levels simultaneously. First, the coding of the entire socio-natural system according to a universal form—this is the function of “science,” both natural and social<sup>77</sup>—and second, the

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74 This argument is related to the work of Moishe Postone, who describes his work as a shift from “the critique of capital *from the standpoint of labour*” to a critique *of labour* as constituted within the form of capital. See Postone, *Time, Labor, and Social Domination*, 1994.

75 It is not *sufficient* that there be capital for there to be a population, as I will argue below, but it is necessary.

76 Spivak, *Outside in the Teaching Machine*, 1993: 62.

77 Thus I must necessarily be involved with the disciplinary subfield of the history of science, without

determination of the best and most efficacious avenues for improvement given by the particular configuration of this socio-natural field, in all of its historical contingency and messy particularity. Capitalist governmentality proceeds, then, by way of the abstract *in* the concrete and the given; it approaches the latter in terms of the manner in which it embodies the former. For this to occur, a tremendous positive labour of abstraction must take place, a coding of the concrete in terms of the abstract. This is what all the multitudinous surveys, censuses, investigations, and studies that I will analyse in the following chapters really do. We can call this the installation of the *value-form* into the system of governing.<sup>78</sup> Capitalist governing, in order to get a hold on the universe of particular things, projects into them their abstract dimension, and then works at that level. With the development of capitalist governmentality in China, political knowledge takes on a new asymptote, a new formal structure in terms of which particular interventions are evaluated as more or less successful.<sup>79</sup> This recoding of the concrete in China according to a new abstraction is the fundamental activity whose history I am writing.

How are we to imagine that a reorganization of social life according to the requirements of accumulation would not call into existence a particular form of governing, one proper to itself? In fact, we do not imagine this, and we have a name for it: economic governance. The only mistake—and it is a very old mistake, but one that we somehow never tire of making—lies in taking it for the very model of governing itself, for that to which, like the economy itself, all

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actually wishing to write a history of science, strictly speaking.

78 This is one of the senses in which W.S. Jevons, one of the progenitors of neoclassical economics—to whom we will return several times in the following chapters—can define economics as “the science of Capitalisation” (*The Theory of Political Economy*, 1879: 241).

79 Thus, while the seemingly endless discussion of how much and at what levels China in this period “became capitalist” is useful, I need not take a position in it. By the capitalization of China, here, I do not mean the relative degree of presence of any particular set of institutions (legal structures, forms of family production, forms of business organization, state institutions, markets and contracts, and so on). Nor is it a question of what percentage of economic activity takes place under conditions that are generally recognized as capitalist (how many wage workers were there? how capitalized were Chinese businesses? how much of the surplus is appropriated by non-capitalist extraction versus capitalist exploitation?). Even if most of China was “non-capitalist” in these senses, by the 1930s all nationalist governing presupposed the schematization of capital.

governing would tendentially approximate, with only the removal of impediments. And, from within the horizon of intelligibility that capital constitutes—that of what Marx calls vulgar political economy—how could we not see things this way?<sup>80</sup>

### CHINESE NATIONALISM AND ITS APPARATUSES

Thus, I want to reemphasize a discontinuity at a point in history where a number of contemporary scholars have chosen to emphasize continuity. A wealth of scholarship has been produced around the strategies and social forms by which (some) Chinese elites came through the transition to modernity intact, that is, in the “same” position of social superordination that they were in before. Social networks and the institutions that structure them—native place associations, the scholarly system that had been organized around the civil examination system and the hierarchy of new educational systems that emerged out of its dissolution in 1905, local and translocal systems of patronage and influence, and so on—have been interpreted (correctly, I think, at a certain level) as the undergirding of social organization that carried elites into the modern, the ropes cast across the chasm that separates the nineteenth century from the twentieth.<sup>81</sup> These, then, would be the loci of a continuity, the means by which the old survives

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80 “Vulgar” here does not mean stupid or unsophisticated, but is used in a rather more technical sense. It refers to an approach that would seek to understand the historical emergence of an economic formation (in the case of political economy, capitalism) entirely from within the coordinates established by that formation. Thus, the transcendental schematization of economic life as such in terms of life, labour, capital, and the economically rationalizing subject that came to characterize what would be called neoclassical economics in the 1870s would represent something like the point of *absolute vulgarization*. I return to this in the next chapter, and in Chapter Five.

81 Some—by no means all—of the key works in this scholarship are R. Keith Schoppa, *Chinese Elites and Political Change: Zhejiang Province in the Early Twentieth Century*, 1982; Min Tu-ki, *National Polity and Local Power: The Transformation of Late Imperial China*, 1989; Susan Mann, *Local Merchants and the Chinese Bureaucracy, 1750–1950*, 1987; Mary Rankin, *Elite Activism and Political Transformation in China: Zhejiang Province, 1865–1911*, 1986; Byrna Goodman, *Native Place, City, and Nation: Regional Networks and Identities in Shanghai, 1853–1937*, 1995; Yeh Wen-hsin, *The Alienated Academy: Culture and Politics in Republican China, 1919–1937*, 1990; and William Rowe, *Hankow: Commerce and Society in a Chinese City, 1796–1889*, 1984, and *Hankow: Conflict and Community in a Chinese City, 1796–1895*, 1989. Several studies of urban reform in various cities in China also stress the continuity of elite action; see Kristin Stapleton, *Civilizing Chengdu: Chinese Urban Reform, 1895–1937*, 2000; Michael Tsin, *Nation, Governance, and*

into the new, stamping Chinese modernity with its particularity. But we ought not to let a continuity at one level—the occupants of positions of social power—obscure a discontinuity at another—that of the general organization of relations of power.

The other great mechanism of continuity is, of course, culture, a “Chinese culture” that is written into both these forms of social organization and the assumptions and intentions of the people who participate in them, and that “covers” the transition, introjecting it into a transition “within” Chinese culture. But here one should take careful note of an historical phenomenon that is, I suggest, closely correlated (both temporally and conceptually) to the emergence of the population in China: the global transmission of the concept of culture itself.<sup>82</sup> As with the population, culture will not be treated here as a constant, something that exists as a kind of substrata of change (in the sense that one would say that a change takes place “in” culture). I will not accept the “cultural anthropological postulate”—that there is nothing controversial about stating that everywhere has a culture—just as I will not accept the demographic postulate. I will take seriously the fact that culture was marked out as a discrete field of social life, a field in which a specificity is to be found, at more or less the same time as the population, which functions at the level of the universal. I begin from the historical fact of the problem of culture,

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*Modernity in China: Canton, 1900–1927*, 1999; and Joseph Esherick, ed., *Remaking the Chinese City: Modernity and National Identity, 1900–1950*, 2000.

82 Andrew Sartori's *Bengal in Global Concept History: Culturalism in the Age of Capital*, 2008, provides a useful global history of the concept of culture (see esp. 25–67) before his more extended analysis of its discursive and political functions within elite nationalism in late-nineteenth and early twentieth-century Bengal. For the different ends to which the concept of culture (and its close correlate, civilization) could be turned in East Asia in the first half of the twentieth century, see Prasenjit Duara, *Sovereignty and Authenticity: Manchukuo and the East Asian Modern*, 2003: 89–129. For a comparison of Chinese and Indian nationalisms in this period which attempts to adjust the analytical terms of subaltern studies, produced as they were out of work on Indian history, to the counterexample of China (it is certainly not my intention to reduce the differences, even if I choose to emphasize similarities at particular levels), see Duara again, *Rescuing History from the Nation: Questioning Narratives of Modern China*, 1995: 205–227. As a cultural historian (which does not mean that he accepts at face value the concept of culture; only that he focuses on the transformations that are refracted through it), Duara takes little account of the dimension of capital. On the global question of colonial and postcolonial national culture, it is hard to do better than Frantz Fanon's “On National Culture” in *The Wretched of the Earth*, 1963.

rather than from the actuality of the referent or its specific contents. One might, from this perspective, suggest that culture becomes the site for the articulation of specificity, the precious bastion, source, and repository of one's innermost and unique selfhood, precisely at the moment and to the extent that *everything else* is given over to the universal logic of capital. Let us not be taken in: the fact that the specific contents of this or that culture—what M.N. Roy (1887–1954), a fierce critic of bourgeois nationalism, called a group of people's “superficial peculiarities”<sup>83</sup>—are unique dissimulates a much more important phenomenon, which is the inscription of every culture into a universal form, and the establishment of culture as a universal site from which it is possible to stake claims of particularity in the name of collectivities. This “politics of culture” (which can be traced back to the German Enlightenment's essentially hypocritical reaction against, first, Napoleon, and second, somewhat later, with the economic policies that Friedrich List has come to stand for, British commercial power),<sup>84</sup> found its way to China in the same period, I suggest, as part of the same transformation that produced the Chinese population.<sup>85</sup>

A movement of specification at the level of content, then, occurs alongside and in the same process as a universalization at the level of form. However different the particular contents of cultures are, they are all composed of the same kinds of things, all having the same immanent

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83 M.N. Roy, “Bourgeois Nationalism” (1923) in *Selected Works of M.N. Roy, Volume Two*, 1987: 125.

84 In the domain of economic policy, this reaction against Britain is doubled in the US with the trajectory of thought about trade policy that runs from Andrew Hamilton (1757–1804) through Mathew Carey's (1760–1839) *Essays on Political Economy* (1822) to his son Henry Carey's (1793–1879) *The Harmony of Interests* (1872), which is as good a statement of economic nationalist principles as any (and not just with regard to international trade). This whole trajectory, and the debate between the British free-trade “school” and the American and German economists of the 1860s and 70s would be an essential structuring foil for working out economic policies in China in the 1920s and 30s. Some of the public debates around this question are discussed in Bryna Goodman, “Economics, Individual Freedom, and National Sovereignty,” 2011. Basically the same thing happened in India (and other places); see Manu Goswami, *Producing India: From Colonial Economy to National Space*, 2004. On the “hypocrisy” of the German bourgeois reaction to British free-trade cosmopolitanism, see Marx, “Draft of an Article on Friedrich List's Book: *Das Nationale System der Politischen Oekonomie*,” 1845.

85 Although there is not here the space to treat the question with the depth it deserves, there is a strong case to be made that such a politics of culture could not have existed in imperial China, being linked as it is to the category of the nation, which was absent until the twentieth century.

structure. This isolation of “culture” takes place within a very limited span of historical time, in a tremendous diversity of places, and by the activities of the agents of specifically bourgeois nationalist projects. In this period, one entered into the universal form of bourgeois civility not by abstracting oneself from one's particularity, but precisely through and by way of one's cleaving to it, just so long as this particularity is demarcated at the level of culture. And while this apparently “loving” effort is devoted to discovering, at the level of culture, what one may be proud of before the scrutiny of the West—this effort of self-reform and -reflection being motivated much more powerfully by shame than by pride—the work of universalization proceeds apace at other levels. Indeed, we can go farther: The work of universalization—installing the capitalist social forms that are the means to “national wealth and power”—is (and is explicitly recognized as) the necessary condition of the maintenance of particularity.

It is a pattern that replicates itself all over the world in this period—here a little earlier, there a little later—the variations having probably as much to do with one's synchronic position within a world system as with any diachronic peculiarities. Each nationalist may, in all good faith, have sincerely believed that the contents of their lifeworlds were unique, but all nationalists inscribed those contents into a universal form—culture—which was in turn related to other forms—the state, the social, the economic—everywhere in more or less the same way. This is related to what Fredric Jameson, in connection with the co-production of national literatures and “world literature,” describes as the dialectic between *a* national and the national-in-general. If one changes the positive referents—the names and the geography—all fiercely national discourses sound basically the same, and have done so since the beginning of the nineteenth century. That is, since the beginning of the global dominance of capital itself. And this is true not just within the realm of culture, nor simply for right-wing nationalism.

## “AGENCY”

All this happens without any help at all from what we previously took for thought, or in other words something that was able to grasp itself as conscious.

— Jacques Lacan

I am making quite a strong claim here: given the presence of certain initial conditions, the biopoliticization of Nationalist China was basically a *fait accompli*, needing only more or less time in different areas of social life to be completed. I am less concerned with how China “realized” that it had a population, which would be something like intellectual history or the history of thought, than with how it became effectively impossible in Republican China to govern without reference to the population. This brings up two related issues: What exactly are these initial conditions, and how do they define a necessity? And: What about contingency and agency?

Necessity has a bad name these days, and certainly the kind of necessity that was on offer when the critique that founded itself on the recovery of agency was launched—the *telos* of modernization—fully deserves that bad name. Once one invokes a necessity, an impossibility of acting differently, the question of agency immediately arises, and one must navigate the tricky waters of trying to think with a progressive politics without necessarily accepting a central term by which it has been theorized. The kind of necessity I wish to describe has nothing at all to do with the teleological narratives of either modernization or the nation. I am entirely in agreement with the critique of their putative inevitability. If the historical actors I will be concerned with could not *not* install the biopolitical, this is not because they were governed, “from behind,” by a deep historical necessity, but because their practices were inscribed into a new transcendental schematization of the world that functioned, if I can put it this way, as the true behind the true: the pre-organization of thought that determined not just the truth or falsity, utility or disutility, of

this or that particular, but the conditions of the true, and thus necessary. And this schematization was that of capital. To be sure, the idea that one's nationality or culture (national culture) was the fount and source of one's agency was a central claim of nationalist anti-colonial movements, including in China, but these movements were themselves, in many instances, the agents of the installation of capitalist universality.

If we are faced with a situation in which one (superaltern) group has been ascribed agency, and another (subaltern) has been denied it—this can be “the West” and “the peoples without History,”<sup>86</sup> or a bourgeois-nationalist elite and the peasant or proletarian masses,<sup>87</sup> or any number of other examples—is our only responsible option to ascribe it to those who have been denied it, to include a collectivity within a category from which they have been excluded? (In any case, I will focus not on the subordinate position of China within a global geopolitical field, nor on that of Chinese modernizing elites in a field of global elites, but on their *superordinate* position within China.) The proposition “*X* has agency, *Y* does not (and therefore, *Y* is in need of the leadership of *X*)” can be negated in a variety of ways. “*X* and *Y* both belong to the set of things that have agency” has been the massively predominant progressive response, but it is not the only possible one. One might say: “*X* does not have agency, *Y* does.” Or: “Neither *X* nor *Y* have agency,” which can itself mean several things: “The set of things that have agency is real, but it happens that neither *X* nor *Y* belong to that set.” This non-belonging could be necessary (*X* and *Y* are not such that agency could be predicated of them) or accidental (they could have it, but

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86 Eric R. Wolf, *Europe and the People Without History*, 1982.

87 This is the problematic according to which the early studies of the Subaltern Studies Collective were loosely organized (see, for example, the first five volumes of Ranajit Guha, ed., *Subaltern Studies*, 1982–1987). The transposition of a condition of subalternity from a “domestic” scene to a geopolitical one, as part of an explanation of the trajectories and developments of nationalist thought—such as we see in Partha Chatterjee, *Nationalist Thought and the Colonial World: A Derivative Discourse*, 1986, and Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference*, 2000—strikes me as beholden to a national logic that, no matter how important it may seem to be to the elites in question, I do not wish to reproduce at a methodological level. The situation is similar in China, where, no matter how superaltern a group may be with respect to the domestic field of China, they can claim a subaltern status with respect to the field of global elites.

happen not to). Or: “Neither have it because it is not a real thing.” The complications multiply: What is the status of this denied attribute? Is the claim that *Y* really did have it, but it was not recognized (in which case the problem is epistemological and intersubjective), or that they really didn't have it (which is a political problem of identity)? If having agency is a condition of being intelligible as human (which it certainly is within the liberal horizon: how can contracts and culpability exist without it?), are those who lack it *inhuman*, or just not (yet) human? (These are not the same thing.) Under what conditions (of tutelage or education, of revolt) can they acquire it, if they can (and if they want it)?<sup>88</sup> Of course, this has everything to do with the fact that agency is a condition of recognizability as a liberal subject. But the liberal subject, with its self-transparency and capacity to initiate contracts, is not the horizon here. Indeed, the basic premise of any approach that can in any sense be called critical is precisely that people *don't* know what they are doing (which is not the same thing as saying that they are idiots). What would be the point or rationale of criticism if people were fully transparent to themselves?<sup>89</sup>

Even if it is true, in broadly schematic terms, that at one level the conditions of super- and subalternity line up with the division between metropole and (semi)colony, and that “China” was in a position of subalternity *vis-à-vis* the imperialist powers, that doesn't tell us much about the field of social power *within* China. The people whose activities I will be tracking were anything but subaltern in China. A “voice recovery” project seems misguided or inappropriate.

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88 In order not to extend this discussion needlessly, I will simply point out that the different possible answers to these questions define very real and specific forms of progressive politics. For instance: Are women equal, but unrecognized as such (which requires one kind of social change), or are they really unequal, so that they should be made so (which requires quite another)? Is a postcolonial independence achieved through approximation to the standards of the colonizer a real independence, or must the colonizer be rejected in its standards and thrown off violently? (And then, in the name of what preceded colonization—the right-wing nationalist solution—or in the name of what will come after it—the left-wing nationalist solution?) Is the solution to the problem of Untouchability—exclusion from caste—in Hinduism and in certain forms of Buddhism to “make all untouchables brahmins” (to include everybody within the caste system: Gandhi's solution), or to make all brahmins untouchables (that is, to get rid of the caste system entirely: Ambedkar's solution)?

89 Of course, one is perfectly entitled to say “What, indeed?”

The history of modern China has *not* been written on the basis of the exclusion of their voices. Quite the contrary. Here, we find the other meaning of agency, the one we refer to when we talk about travel agents or insurance agents: the means by which a connection between two formerly separate things is made (an insurer and an insuree, for instance). Let us not imagine the actors I will discuss in this dissertation either as members of the oppressed masses (they clearly were not) or as witless dupes of Westernization (since, on the basis of my discussion of capital, above, this last term dissimulates the real dynamic). Rather, they were full co-participants in the constitution of the global field of capital. While China's exclusion was being organized at one level (the level of “full sovereign subjectivity as a nation”), its inclusion—its coding according to the form of value—was proceeding at another level. Its exclusion was marked precisely by reference to, and on the basis of, its inclusion into a general system of commensurability.

This would be an opportune moment to discuss the relation of this project to Ruth Rogaski's seminal work, *Hygienic Modernity*.<sup>90</sup> Clearly this dissertation operates in the discursive space opened for the field of modern Chinese history, in many ways, by Rogaski's book, which was one of the first in the field to engage Foucault's work seriously, though certainly not uncritically.<sup>91</sup> It has been invaluable both for describing the mechanisms of transmission of some of the knowledges I treat in the following chapters and in opening up avenues of further research for later scholars, myself included. By inscribing her research within

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90 Ruth Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China*, 2004.

91 There has been a great deal of resistance to Foucault's work in the field, which has largely structured itself around two closely related arguments: first, that because his objects of study were confined in their geographical scope to Europe, his work is therefore inapplicable to a non-European or -Euroamerican context such as China; and second, that his work (along with Marxism, which I also utilize extensively) belongs in the category of “Western Theory,” and is therefore similarly of limited utility in the study of non-Western contexts, which ought properly to be understood in terms that arise organically from within themselves. If this dissertation hopes to establish nothing else, it is that this is ultimately not a valid position, provided that we proceed from the *form* of his analyses—how they enable one to construct objects of historical enquiry—rather than from their specific contents—his specific substantive historical claims about these objects. (Rather like Mao, one might add, with respect to Marxism; see Nick Knight, “Mao Zedong and the ‘Sinification of Marxism,’” 2007.)

the macrocategory of modernity, though,<sup>92</sup> she places these knowledges in a relation of functional subordination to a widely-recognized effort on the part of Chinese elites to attain something they felt themselves to be painfully lacking: modernity, of course. Chinese elites used these knowledges, to be sure, to negotiate both their subordinate position in the field of global elites (the “search for modernity,” which really means the search for acceptability in the eyes of their Western judges)<sup>93</sup> and their superordinate position in the field of class relations in China (since they are the governmental knowledges that correspond best to the imperatives of controlling others in the radically new situation that they found themselves in).

But this narrative does not exhaust the things we might say about these knowledges, and their effects cannot be reduced to their instrumentality in the service of agents with clearly stated strategic aims. While the kinds of knowledges that I will discuss below certainly express and reinforce existing power relations, they also create and organize new power relations. That is, while they enable new forms of action on the part of elites, they also act *on* these elites in ways that there is no reason to assume these elites are aware of. While elites are especially well-placed to acquire these new knowledges, they are not, after the fact of their acquisition and deployment, the same kinds of elites that they were before (even if we can discover, as we certainly can, genealogical continuities between the occupants of elite positions at point A and point B), at least if one approaches the issue not from the perspective of the diachronic ways in which elites “reproduce” themselves over time but from that of the synchronic ways in which their activities structure the field of power and class relations at a given moment. Constraining one's analysis to the role of these knowledges in the well-known story of elite negotiation of imperialism and local control tells us nothing about the structure of these knowledges, or what

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92 See above, pp. 32–33.

93 This is the aspect that Rogaski focuses on, even if she also examines the effects of the reforms associated with these knowledges on subaltern classes (nightsoil collectors in Tianjin, for instance; [cite]).

they may have accomplished above and beyond the intentions of the agents who put them into effect, whether those intentions be nationalist, cravenly self-interested, or anything else. Above all, I argue, it misses completely the dimension of *capital*, the real historical installation of the abstract as such into concrete social life. Which is, as I will also argue, the absolutely crucial dimension to understanding the historical effect of capitalist biopolitics on the nature of global governing in the period covered by this dissertation.

To put it in somewhat Lacanian terms (without wishing thereby to import the whole Lacanian apparatus): They do not “have” the apparatuses or organs that “enact their intentions”; they (and their intentions) are *constituted* by them. What, methodologically, is gained by having to refer these apparatuses and the practices that constitute them back to some structure of intelligibility pertaining to a subject that would be said to contain or “cover” them (in the sense of covering laws in physics)? Is it the intermediation of some “holding consciousness” that gives practices their intelligibility? Might we not rather link subjects to each other by way of practices and the systems of their interactions, which may not at any point enter into a form about which it is possible to have the intentions that an agency could enact in the first place? Can people not be engaged in practices without their subjectivities really being involved at all in any relevant sense? If nothing is intended, or better, if any number of things could be intended without this having a material effect on the practice in question, and if we cannot assign a subject whose practice it would be, does this mean that there is no practice, no principle of intelligibility?<sup>94</sup> I will be concerned here not with the correct attribution of agency but with the specific effectivity of technical apparatuses, with knowledges that do not belong “in” specific people but that are “invested in complex institutional systems,”<sup>95</sup> with defining an intelligibility that is proper to

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94 Hence, this project diverges as well from a history of *mentalités* which would find the principle of intelligibility of a diversity of practices and phenomena at some “deep” structural level that would embrace and contain this diversity into a totality, of which it would be possible to say that it was a civilization.

95 Foucault, *Ethics, Subjectivity, and Truth*, 1997: 5.

them, and with describing, as far as possible, an historical transformation without relying on a set of assumptions that embody in advance precisely what is to be explained (the nation, classes or status groups, individual agency or the liberal subject, an economy, and so on). To be sure, these technical apparatuses involve both knowledge and action, but they do not *thereby* involve the faculty of agency as an abstract determination of humanity (“human agency”). In any case, agency (where it does function) occurs within a scene characterized by the acceptance of certain inescapable coordinates, which cannot but have the appearance of necessities or “truths.” These coordinates change, and this cannot be said to be due to the sovereign operations of an agency that is, in fact, staged entirely within them. The approach taken here will be agnostic: whatever we might eventually decide about the status of this category, agency, it is a superfluous postulate as far as a history of governmental logics is concerned, these logics being, in many ways, what set the stage within which agency appears.

#### THE PLAN OF THE DISSERTATION

Instead of starting at the beginning of the story, I will start at the end, so to speak: at the point at which the massive social transformation in question is formalized into a mathematical equation. In the next chapter, then, I will treat the socio-mathematical problem of “race efficiency.” According to its theorists in Republican China, this referred to the relative cost across races, in vital energy, of producing a given increment to the population, and the consequences of this for the underlying problem of accumulation (dissimulated in the question of race efficiency into a matter of “social progress”). The magic of the equation for race efficiency—“Social progress = race energy – (cost of subsistence + cost of population growth),” or  $A = X - (Y + Z)$ —lies in the manner in which it brings absolutely every element of social life onto the agenda of capitalist governmentality, insofar as each of these elements is a bearer of the vitality whose production is

to be rationalized.

China has an extremely long history of keeping track of the subjects of the imperium, for a number of reasons. But the mere existence of what we would now call population registration is not sufficient to make a given regime of knowledge biopolitical in the proper sense. The subjects of the empire were *not* registered as elements of a population which was the object of specified interventions, and the basic logic(s) of governing operative in the late imperial Chinese social formation were not and could not be organized with reference to the “population-ness” of the governed elements. Masses of statistical “data” were collected, on the formal basis of which it would be *possible*, with the insertion of certain ancillary assumptions which were not present in the imperial period, to perform biopolitical calculations. But—this is the crucial point—*such calculations were never actually made*. No one in imperial China ever thought to calculate birth and death rates, or to track systematically the frequency, intensity, or distribution of diseases, or to link age and sex ratios to the problems of production and accumulation. How the number of people in each dynasty (but in particular the Ming and Qing dynasties) appeared within the apparatus of state knowledge; how political reflection in China could not register the population as an organizational principle (and for reasons quite other than those usually given); and how late imperial statecraft was organized with reference to problems very different than those in which a problem of population can arise—these questions will be treated in Chapter Three, before studying the emergence of the form of statistical data collection that *does* make a population possible: vital statistics.

Once vital statistics are added to censuses and enumerations—that is, once *dynamics* are added to *statics*—the population becomes the properly natural-scientific object of a formalizable knowledge: demography. At this point, the population becomes very much more than a number of people. It becomes a transcendental *tertium quid* whose material or spatial aspect is a given

composition of a group of people in terms of a set of particular characteristics at a moment in time and whose dynamic or temporal aspect is the quantity of energy that may be determined to inhere in that group of people over a definite period. This formalization is only visible through the concrete analysis of actual governmental practices, because it is produced by their simultaneous operations and embedded within them; there is no theorization of it to be found. I will argue in Chapter Three that this coordination of material particulars and a general equivalent gives the population to political reflection in the form of *living capital* (生命資本 *shengming ziben*),<sup>96</sup> and that the population is thus constituted—formally, that is, regardless of whether anybody actually realized this or not (though some did, in a sense)—as a *commodity*. Since the population *is* capital, one can manage it in the same way that one manages any other form of capital. I will show this by way of an analysis of the theory of central banking in China in this period: how a central bank was supposed to be related to the historically-given reality of banking and finance in China was isomorphic with how a population management system was supposed to act with regard to the historically-given social and cultural systems that impacted China's production of life.

So far, there is little that is specifically Chinese in all of this, at least at the level of the formalization of a field of governability. But this is a form of governing that consists precisely in the coordination of a formally universal set of measures and the accidental, historical, contingent arrangements of social life that comprise any particular place or time. The distribution of public health in Republican China—which will be the subject of Chapter Four—carried along with it exactly this dynamic. Public health gave practices of governing a form that linked health to numerous other domains of governing, and this directly entailed the population in a very strict sense: All of the natural and social phenomena that contributed to health were

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96 Zhang Shiwen 張世文, *Shengming tongji fangfa* 生命統計方法 (*Methods of Vital Statistics*), 1943: 2.

belted together, as it were, by their systematization as the conditions of existence of a population. Rather than public health emerging out of a recognition of a responsibility to care for a population, public health was thus one of the key species of governing through which the population was embedded into the grain of Chinese social life. Where public health went, there too went the population.

In Chapter Five, I move from the biomedical domain to the properly national-economic domain, and track the first emergence of the problem of “rural surplus labour-power” (農村過剩勞動力 *nongcun guosheng laodongli*), a category that can only have been sheer nonsense within the horizon of late imperial statecraft.<sup>97</sup> What transformation must have occurred such that most of the “vast” rural population of China could suddenly appear as “superfluous to requirements”? To where can we trace the origins of this transformation? With regard to the rural reconstruction movement, launched in the 1920s but really systematized (to the extent that it ever was) in the 1930s, I will trace the incorporation into its basic data-gathering activities of another general equivalent, the Man-Work Unit (MWU), developed in the 1910s in the rural reform movement in the United States. If the incredible phenomenal variety of Chinese rural life was to be made amenable to rationalizing improvements, it would all have to be brought under a common form. This form was the quantitative relationships it maintained with the variable productive capacities of a population.

In the Conclusion, I will argue that we must revise our understanding of the one child policy and population management more generally in the PRC period according to what I will have shown about its “prehistory.” I will describe how the mechanism for the reentry of capitalist, biopolitical forms of governing into China in the late 1970s—of which the one child policy was one effect—was, in fact, the resolution by *fiat* of a long-standing debate internal to

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<sup>97</sup> Being nonsense is not the same as being false.

Chinese socialism and a related shift in economic accounting practices. A related effect of this shift was the sudden reemergence of the problem of surplus labour-power, so it is at least interesting that it was engineered by some of the same people discussed in Chapter Five.

INTRODUCTION

The entry of techniques that can be called biopolitical or populationist into the field of political, social, and economic calculation in China could be tracked from any number of points. Where I will begin is not just anywhere, however, and is certainly not the “beginning” in any temporal sense. In this chapter, I analyze the appearance in China of the problem of “race efficiency” (種族效能 *zhongzu xiaoneng*). In the briefest possible terms, this describes, according to the theorists we will treat below, the cost in vital or race energy (生命 *shengming* or 種族精力 *zhongzu jingli*) of an increment of 1/1000 to a population. My central concern will be to describe the logic and implications of a calculation of this nature, which expresses population dynamics as expenditures of and returns on race energy—given the symbol  $V$ , for vital energy—and enables them to be mathematically related *as quantities of  $V$*  to economic life or the cost of subsistence (經濟生活之支持 *jingji shenghuo zhi zhichi*) and social and cultural progress (社會文化進步 *shehui wenhua jinbu*), these having been determined as well by the same unit. Improving race efficiency, then, is a matter of discovering the factors which go into the formation of this cost, and then reducing it. By figuring out what is involved in this curious notion, we can actually go some way towards organizing an approach to the problem of population in its entirety, since what is involved in these calculations—vitality—is precisely the proper itself object of populationism. But it is a very peculiar object, as I will show. A great deal hinges on a correct understanding of it.

These calculations are anything but an obscure formulation. Or rather—since, to be

honest, they are quite obscure—it is in them that the matter is mathematically “perfected,” so to speak. Which is why I begin with them. By working through these formulae, I can isolate and describe the basic formal transformation of governing as a social practice and of the society to which it refers which is entailed by and entails the emergence of a population as an object. The interest of this analytic of race efficiency, then, lies in the schematization that can be derived from it of the project or series of projects that implanted “the population” into the very centre of political rationality in China, where, making all the necessary adjustments, it still resides today. From it, one can derive the following:

1. A universal or “transcendental” object: vitality, or life
2. A mode of regulation and “style of work”: indirect intervention
3. A particular relationship to this object: as capital

These three elements, I suggest, form the logical skeleton of an historically specific “form of government.” This term should not be interpreted to indicate a kind of state structure or a division of powers. Nor does it have any direct connection to the problem of types of political system (liberal, authoritarian, democratic, socialist, or what have you). The government in question here does not pertain to a state, except incidentally or secondarily, and nor is it “political” in the political-scientific sense of ways of arranging competing interests. A form of government is rather a kind of ramification of a practice of governing, of directing and channeling things, in which the elements are 1. a field of objects, 2. a set of techniques, and 3. a specific purpose. Defined in this way, a form of government is not defined according to any subject whose practice it might be (a nation, a class, or what have you). Such a practice of demarcating objects, determining purposes, and organizing interventions does not issue from “the state” in any of its forms or from anything that it might represent; on the contrary, the contours, limits, and specific functions of a state derive much more from the rationality deployed by forms of government. As Foucault puts it:

If the state is what it is today, it is precisely thanks to this governmentality that is at the same time internal and external to the state, since it is the tactics of government that allow the continual definition of what should or should not fall within the state's domain, what is public and what is private, what is and is not within the state's competence, and so on. So, if you like, the survival and limits of the state should be understood on the basis of the general tactics of governmentality.<sup>1</sup>

From this, certain questions arise: In what form of social organization can something like populationism make any sense at all? What form of government corresponds to the very existence of a population problem, and how are the particular agendas of particular states (as opposed to “the” state) changed by the existence of that form of government? In the Chinese case, in the Republican period—though not only there—these questions concern nothing less than the transformation of an entire social formation into a machinery of capital accumulation. But we have first to work through the logic itself.

#### THE GENERAL PROBLEM OF RACE AND EFFICIENCY

The problem of race efficiency and its peculiar object, vitality, is not a Chinese invention. Discussions of race efficiency can be found in a number of places in the period from 1890 to 1930. In attempting to track its origins, one is struck by the great variety of contexts in which it appears, the range of seemingly disparate social concerns to which it is linked, and the number of different meanings which are given to it. It is difficult to see at a first pass how all of the discussions we can find of this term could be derivations of the same concept or logic. For Karl Pearson (1857–1936), the famous eugenicist and inveterate mathematical formalizer of racist and sexist ideas, racial efficiency was both a function of the coefficient of variation in a given population (a higher co-efficient giving a higher efficiency) and an equivalent of “stability, combined with capacity to play a part in the history of civilization.”<sup>2</sup> For the American

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1 Foucault, *Security, Territory, Population*, 2007: 109.

2 Pearson, “Mathematical Contributions to the Theory of Evolution. III. Regression, Heredity, and Panmixia,” 1896: 277.

sociologist D. Collin Wells, a contemporary of Pearson, representing Social Darwinism, it is maintained only “by incessant struggle and ruthless elimination” between both races and classes, and is a function of “the rate of elimination and the severity of the struggle [for existence],” which determines whether the qualities that “the survivors transmit ... to their descendants ... are above or below the racial average.”<sup>3</sup> Wilhelm Schallmeyer (1857–1919), a prominent early German eugenicist, makes biological efficiency into an index of a population's relative capacity to work, and a putative *sine qua non* of economic efficiency.<sup>4</sup> For the American political economist Irving Fisher (1867–1947)—America's first “celebrity economist,” about whom we will have much more to say later in this chapter and in the dissertation as a whole<sup>5</sup>—“racial economy” would be improved by the recognition of the moral responsibility of idiots not to constitute an unnecessary public burden by having lots of children; it is in this light that

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3 Wells, “Social Darwinism,” 1907: 695–696. Although Wells does not himself provide any formulae, the possibility of formalization is present in virtual form, with this mention of rates and averages.

4 For this argument, see Sheila Faith Weiss, *Race Hygiene and National Efficiency: The Eugenics of Wilhelm Schallmeyer*, 1987: 113–114 *et passim*. We find, too, the race/population defined as a stock of capacities which can be more or less suited to the demands of economic efficiency, as in Schallmeyer's 1905 attack on Werner Sombart and the other “humanist sociologists” for neglecting the “physiological basis” of all knowledge and society: *given the shared goal of economic efficiency*, Schallmeyer claimed that the hereditarily generated capacities of the race constituted a factor which, if not properly attended to, could squelch from the outset any attempts to rationalize the national economy. For him, biological composition determined the possibilities of productivity or work, and the degree to which an organism could be improved by training; as this composition deteriorated it would necessarily counteract any improvements in productive technique. Here, the population appears less as a substance than as an organizational principle, a variable capacity for work. The scientific measurement of this work, or expenditure of energy in performing a task (*Kraft*), can be traced back to Hermann von Helmholtz's physiological experiments starting in the 1840s. On these, see Robert M. Brain and M. Norton Wise, “Muscles and Engines: Indicator Diagrams and Helmholtz's Graphical Methods,” 1998; on the “science of work” and energy more broadly, see, again, Wise, “Work and Waste,” 1989a and 1989b; Max Jammer, *Concepts of Force: A Study in the Foundations of Dynamics*, 1957; R. Bruce Lindsay, ed., *Energy: Historical Development of the Concept*, 1975; P.M. Harman, *Energy, Force, and Matter: The Conceptual Development of Nineteenth-Century Physics*, 1982; Rabinbach, *The Human Motor*, 1992; Simon Schaffer, “Babbage's Intelligence: Calculating Engines and the Factory System,” 1994; and Crosbie Smith, *The Science of Energy: A Cultural History of Energy Physics*, 1998). I return to Helmholtz in the next chapter. Schallmeyer is, as it happens, in a direct teacher-to-pupil line with Helmholtz, having studied for some years with Wilhelm Wundt in Leipzig, who in turn had worked in Helmholtz's Heidelberg laboratory for several years in the early 1860s.

5 Fisher figures prominently in the current research of Timothy Mitchell on the formation of the concept of “the economy” in the 1920s and 1930s.

he speaks favorably of the Indiana sterilization law, enacted in 1909:<sup>6</sup> “[H]umanity will probably submit in the future to communal restriction of the right to multiply with as good grace as it has given up the right to rob and to rape.”<sup>7</sup> Indeed, former President of the United States William F. Taft, in his preface to Fisher's *How to Live: Rules for Healthful Living Based on Modern Science*, makes the efficiency of the race depend in part on “the insidious encroachment of the chronic diseases that sap the vitality of the individual.”<sup>8</sup> In a similar vein, for Wu Lien-teh (伍連德 Wu Liande, 1879–1960), in “The Problem of Venereal Diseases in China,” it is “affected greatly” by the “paralysis, malformation, mental deficiency, insanity, epilepsy and blindness” due to gonorrhea and syphilis in a population.<sup>9</sup> In 1915, Howard Odum (1884–1954), a psychologist and sociologist trained at Columbia whose later work revolved around “ameliorating race tensions” in the post-World War One southern US, argued that race efficiency is a function of the diversity of specialized skills present in a race, and is thereby linked to problems of education and development.<sup>10</sup> In 1920, Margaret Sanger (1879–1966)—among other things, the most famous birth control activist of the time—made racial efficiency into an index and a function of the freedom with which “motherhood” can decide when and under what circumstances it will bring forth children: “Natural law” has determined the mother to be “the

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6 This was the first eugenic sterilization law in history. However, one should note the very valuable results of Véronique Mottier's studies on eugenic legislation in Switzerland and the US: “the main effect of the introduction of [the eugenic sterilization law in the canton of Vaud in Switzerland in 1928] was in fact to *reduce* the number of sterilizations that were carried out. Interestingly, in some states of the USA the introduction of legislation permitting sterilization without consent in the first decades of the twentieth century similarly *reduced* the number of sterilizations, which had previously been carried out solely on the professional authority of doctors in institutions such as homes for the mentally retarded and state-run psychiatric hospitals” (Mottier, “Eugenics, Politics, and the State: Social Democracy and the Swiss 'Gardening State',” 1998: 267, emphasis added).

7 Fisher, *National Vitality, Its Wastes and Conservation*, 1909: 674. In support of this view he cites R.L. Dugdale's *The Jukes*, first published in 1877, and that family's having constituted an “economic loss to the State” of “over \$1,000 for each member of the family,” which could all have been prevented had their progenitors “been sterilized under some law like that of Indiana” (675).

8 Taft, in Fisher, *How to Live: Rules for Living Based on Modern Science*, 1917: vi.

9 Wu, “The Problem of Venereal Diseases in China,” 1926: 30. Wu Lien-teh will figure prominently in Chapter Four.

10 Odum, “Standards of Measurement for Race Development,” 1915: 381–382.

expression and conveyer of racial efficiency in all species.”<sup>11</sup> Further,

Motherhood, when free to choose the father, free to choose the time and the number of children who shall result from the union, automatically works in wondrous ways. It refuses to bring forth weaklings; refuses to bring forth slaves; refuses to bear children who must live under the conditions described. It withholds the unfit, brings forth the fit; brings few children into homes where there is not sufficient to provide for them. Instinctively it avoids all those things which multiply racial handicaps.<sup>12</sup>

For the team of Hawaii-based psychologists and psychometrists Stanley D. Porteus (1883–1972) and Marjorie E. Babcock (b. 1899), a “Racial Efficiency Index” (REI) could be found by weighing and averaging the scores of the various races to be found on Hawaiian plantations according to a range of factors and axes: group planning capacity; resistance to suggestion—self determination; inhibition of impulse—prudence; determination; self control; stability of interest; conciliatory attitude—tact; and dependability.<sup>13</sup>

Examples could be multiplied, but these should suffice to establish a provisional series of the points of contact which the notion of race efficiency maintained with other concerns and fields of knowledge: a) statistical variation; b) stability; c) the history of civilization(s); d) the infantile death rate; e) heredity and genetics from Darwin’s theory of pangenesis through Weismann’s theory of the germ-plasm to Ronald Fisher, J.B.S. Haldane, and Sewell Wright’s development of population genetics; f) capacity to work; g) social work and the economy of charity; h) intelligence testing;<sup>14</sup> i) sterilization; j) chronic diseases; k) contagious diseases; l) the

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11 Sanger, *Women and the New Race*, 1920: 229.

12 *Ibid.*, 45.

13 Porteus and Babcock, *Temperament and Race*, 1926: 92–95, 108–109. These scores were derived from interviews with the white plantation managers. (Seriously.) For Porteus and Babcock, the question revolved centrally around the problem of *educability*: “Assuming then that each dollar spent on education in this community brings us back 100 cents worth as regards teacher-training, physical equipment, wisely planned curriculum and efficient school administration, still the effect of a low average social efficiency index is very similar to having the rate of financial exchange against us, the dollar being worth only little more than seventy per cent of its face value [in the case of the Filipinos, whose REI is 70]” (113–114).

14 A very useful history of the development of psychometrics in the US, and of the odd trajectories it has taken at various points in its history, is given in Alexandra Minna Stern’s *Eugenic Nation: Faults and Frontiers of Better Breeding in America*, 2005: 93–99, *et passim*. The most prominent expert on and proselytizer of statistical intelligence testing in China during the Republican period was Zhu Junyi 朱

moral economy of prostitution; m) development and evolution; n) motherhood and feminism; o) the organization of agricultural labour; p) education and the problem of educability. *Prima facie*, this series resembles nothing so much as the classification of animals in the Chinese encyclopedia “cited” (invented) by Jorge Luis Borges in “John Wilkins' Analytical Language,”<sup>15</sup> famously cited by Michel Foucault at the beginning of *The Order of Things*.<sup>16</sup> However, the fact that we can identify a multitude of meanings for a term does not entail that any one of these meanings, or even all of them, are not perfectly coherent, or do not identify a perfectly specific problem or phenomenon. Neither does it mean that we need to “resolve” them into one definition, or pick one, or come to any agreement whatsoever about what the term “really” means. We could, rather, construct a kind of tableau of elements which are found in connection to discussions of race efficiency. In each particular case, then, the problem is variably constituted as a constellation of elements from (at least) the following literatures, in no particular order:

1. A Social-Darwinist geopolitics
2. Neo-classical or marginalist economics

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君毅 (1892–1963), trained in educational psychology at Johns Hopkins University and Columbia in the late 1910s and early 1920s and, along with Chen Changheng and Liu Dajun, a founding member of the Chinese Statistics Association; some of his major works are Zhu, *Jiaoyu tongjixue* 教育統計學 (*Educational Statistics*), 1926; Zhu, Zhang Guandan 張冠丹, and Gu Shusen 顧樹森, *Jiating guanli fa* 家庭管理法 (*Methods of Household Management*), 1932; Zhu, *Jiaoyu xinlixue dagang* 教育心理學大綱 (*Outline of Educational Psychology*), 1933a; *Tongji yu ceyan mingci Ying-Han duizhaobiao* 統計與測驗名詞英漢對照表 (*Tables of English–Chinese Vocabulary in Statistics and Testing*), 1933b; and *Minguo shiqi de zhengfu tongji gongzuo* 民國時期的政府統計工作 (*The Statistical Work of the State in the Republican Period*), 1988. Employees of the National Government and various other populations were regularly tested for their levels of intelligence; see, for example, Peter Wei Lin, “Statistical Analysis of the Personnel of Chinese Provincial and Municipal Governments,” 1931a, and *idem.*, “Statistical Study of the Personnel of the Chinese National Government,” 1931b.

<sup>15</sup> Borges, *Selected Non-Fictions*, 1999: 229–232.

<sup>16</sup> In which they are divided into: “(a) belonging the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) *et cetera*, (m) having just broken the water pitcher, (n) that from a long way off look like flies.” See Foucault, *The Order of Things*, 2002: xvi).

3. The general problem of efficiency and management<sup>17</sup>
4. Specific problems in the academic disciplines of political economy and public administration in the late nineteenth and early twentieth centuries
5. Actuarial mathematics and the insurance industry
6. Quantitative, positivist social science
7. Race relations
8. Functionalist biology/physiology and genetics
9. Vital statistics as the “bookkeeping of life”<sup>18</sup>
10. Transnational migrations in the post-World War One world and the global problem of agricultural labour supply
11. The problem of the “economic value of human life” and “human capital”
12. Competing philosophico-scientific definitions of “life” and “energy”

This is not the place to undertake the genealogy of the connections between all of these fields, however certain it is that they do exist. These elements constitute, though, the reference points or trajectories in relation to which something like a notion of race efficiency can emerge.

Without embarking on a comprehensive history of its development—which would be terribly interesting—we can at least see that the notion of race efficiency is circulating in this period within, between, and in the interstices of discursive domains which *can* be seen as more

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17 By the 1910s and 1920s, “Taylorism” had come to function as the most convenient shorthand for this science, but one must not neglect the first explicit thematizations of “management science” by people like Andrew Ure (1778–1858) in *The Philosophy of Manufactures; or, An Exposition of the Scientific, Moral, and Commercial Economy of the Factory System of Great Britain*, 1835; Charles Dupin (1784–1873) in *Discours et leçons sur l'industrie, le commerce, la marine, et sur les sciences appliquées aux arts*, 1825; and Charles Babbage (1792–1871) in *On the Economy of Machines and Manufactures*, 1835. It is with figures like these that “political economy” in the first half of the nineteenth century can be seen to be much more than a theory of economics, but rather as a systematic enterprise for the reorganization of an entire society around the requirements of efficiency and accumulation. Each of these men was also deeply involved in related problems of capitalist social organization: life insurance (see Babbage, *A Comparative View of the Various Institutions for the Assurance of Lives*, 1826); public health (Ure, *An Experimental Enquiry into the Modes of Warming and Ventilating Apartments, in Reference to the Health of Their Inmates*, 1836), and the proselytizing of “the concord or classes” (Dupin, *Bien-être et concorde des classes du peuple Français*, 1840). Robert Owen's (1771–1858) socialism, organized around the cooperative as the “cell” of a New Society—I will return to this in the context of the Nationalist rural reconstruction movement in Chapter Five—was predicated upon exactly the same kind of organic, scientific, and harmonious organization of capital and labour within the “social enterprise.” See, for instance, *Report to the County of Lanark, and A New View of Society*, 1812/13 and 1821.

18 This is the topic of Chapter Three.

or less separate, which can be delegated to a particular historiographical literature: the history of economics, of the social sciences, of medicine, of social reform, and so on. But we could also go in the other direction: instead of approaching each case as a subset of a given knowledge or activity, we can instead use its coexistence in the various elements of this set to link them together as themselves subsets of some *tertium quid* which it is the task of the present chapter to isolate: *What* situates the problem of race efficiency in so many putatively disparate knowledges? What is stringing them together like this, such that they come thereby to be linked to each other in definite ways? How can the notion of race efficiency be used to reveal a field of governability that would involve them all?

The problem of race efficiency, it must be said, is in no sense the apex of this biopolitical trajectory. After World War Two, “the race” receded as the ultimate subject, bearer, or container of life as such, but the linking of life to governmental technique is in no way diminished by its replacement by the population in the 1950s. As the race recedes, then, the problem of population efficiency takes its place within the post-World War Two problem of the formation of “human capital,” a strand of the genealogy of which I will trace in Chapter Five. But again, by the 1950s, this latter problem had coexisted with that of race efficiency for at least 75 years.<sup>19</sup>

### THE RACIAL EFFICIENCY OF THE CHINESE

At least two discussions of race efficiency appeared in China in 1930. One is from Chen

Tianbiao 陳天表's *Research on the Problem of Population* (人口問題研究 *Renkou wenti*

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19 In “On Some Doctrines of Population,” 1877, for instance, the great British health reformer William Farr (1807–1883) is very concerned to establish the importance of the economic values of units of population, rather than their abstract quantities (this in the context of the massive public debate in Europe about declining birth rates and comparative military strength in the last third of the nineteenth century and into the twentieth). In “The Living Capital of the United Kingdom,” 1891, J.S. Nicholson sets himself the task of finding “the money-value of the 'living capital' of the United Kingdom, that is to say, the 'capital' fixed and embodied in the people as distinguished from the lands, houses, machinery, and the like” (96).

yanjiu). The other is from Xu Shilian 許仕廉's *Population Problems in China* (中國人口問題 *Zhongguo renkou wenti*). First, Chen Tianbiao:<sup>20</sup>

In evaluating any organism (機體生命 *jiti shengming*), we can ... take the relative strength of any creature's basic capacities (基本能力 *jiben nengli*) to be our measure (衡 *heng*) of fitness. Thus, if a creature's organization is incomplete, or if its natural endowments are dissipated, the instantiation of biological law in this case must converge with the law of natural selection [and it will die out].<sup>21</sup>

Chen's criteria for determining whether a feature is eugenic or dysgenic has two aspects: “the degree of the power of adaptation” (more simply, adaptability) and the relative presence or absence of “exceptional capacities or deficiencies,” according to which the feature will be positive or degenerate—here he cites the work of the most famous eugenicist in China at the time, Pan Guangdan's *Collected Discussions of Sociobiology* (人文生物學論叢 *Renwen shengwuxue luncong*, 1928). These have especially to do with an organism's or a species' ability “to contend independently with its environment” (獨自與生物環境相周旋 *duzi yu shengwu huanjing xiang zhouxuan*), whether this is nature or other organisms or species.<sup>22</sup> Having established these things, Chen argues, “we can determine what a particular race's efficiency refers to.” First, it is related to a race's relative level of civilization (文化程度 *wenhua chengdu*) and speed of social progress (社會進步速 *shehui jinbu su*), which are “the product of that race's surplus energy” (過剩精力 *guosheng jingli*). Thus:

A race's degree of efficiency can be determined by the cost of racial energy and the value of its adaptive traits. If this value is high, then social progress and cultural development will be rapid; otherwise, society and culture will stagnate and regress.<sup>23</sup>

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20 Despite a fairly extensive search, I have not been able to turn up much in the way of biographical information about Chen. He is better known, or at least more frequently cited (which even then is not frequently), as a theorist of central banking, in reference to his 1934 book *Zhongyang yinhang zhi lilun yu shiwu* 中央銀行之理論與實務 (*The Theory and Practice of Central Banking*). This latter text will figure prominently in the next chapter.

21 Chen, *Renkou wenti yanjiu*, 1930: 8.

22 *Ibid.*, 8.

23 *Ibid.*, 9.

Second, then, race efficiency is relative to the cost of producing the surplus race energy whose effect is social progress and civilizational development, and to the rates at which positive traits are passed on and negative traits eliminated.

We find identical formulations in Xu Shilian's text,<sup>24</sup> and some further extrapolations from the same logic more clearly spelled out. For instance, “According to the most recent sociological theory, social progress is the product of the surplus energy of the race.”<sup>25</sup> But Xu's field of concerns, the social forces that he selects to be acted on, and the factors of the general social-productive process that he finds to be pertinent are all very different. For Chen, this surplus energy is the effect of the salutary combination of genetic elements, whereas for Xu it is the collateral product of forms of social organization. In any case, almost exactly in the middle of Xu's book is his chapter on the family, and almost exactly in the middle of that is the section on

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24 We know a great deal more about Xu Shilian, whose English name is Leonard H.S. Hsu. He obtained his MA in Sociology and Political Science at Stanford in 1922, and then a Ph.D. from the University of Iowa in 1923. As the first Chinese full-time faculty in sociology at Yanjing University from 1925 (when Yanjing had the only sociology department in China), then as Chair of the Department, 1926–1929, and as a founding member and first Chair of the Chinese Sociological Society (中國社會學社 *Zhongguo shehuixue she*) in 1931, he was a central figure in the development of the “sociological movement” in China from the late 1920s. For his own report on the progress of this movement, see Hsu, “The Sociological Movement in China,” 1931. From 1933, he served as well on the National Economic Council (全國經濟委員會 *Quanguo jingji weiyuanhui*), about which I will have much more to say. For more on Xu, see Yung-chen Chiang, *Social Engineering and the Social Sciences in China, 1919–1949*, 2001: 46–77. Very useful basic coverage of the expansion and distribution of sociology departments in China in the late 1920s and 1930s is provided in Zheng Hangsheng 鄭杭生 and Li Yingsheng 李迎生, *Zhongguo shehuixue shi xinbian* 中國社會學史新編 (*The History of Chinese Sociology, Newly Compiled*), 1999.

25 Xu, *Zhongguo renkou wenti*, 1930: 82. This appears practically verbatim in Chen's text, 8–9. An interesting thing happens on this idea's way into Chinese, however: immediately following the Chinese is the “same” sentence in English (unattributed), but with “men” instead of “the race” (種族 *zhongzu*). In another work, Pan Guangdan uses 種族 *zhongzu* to mean “species,” which is different again; see Pan, *Zhongguo zhi jiating wenti*, 1928b: 1. This idea is pervasive in Spencerian-Durkheimian social thought, and was certainly so in Progressive Era U.S. sociology and economics. T.N. Carver—see the previous chapter, p. 9, n. 15—produced a book-length exposition of this idea in *The Essential Factors of Social Evolution*, 1935, and conceived another of his books, *The Economy of Human Energy*, 1924—which provides a kind of extended paradigmatic statement of this whole governmental problem—as “a discussion of the agencies which make a surplus of energy possible” (1935: 291). Given Carver's stature in rural economic reformism (a topic I will return to in Chapter Five), it is likely that Xu Shilian was surrounded by these ideas and the experiments conducted around them when he was studying in the Department of Sociology at the University of Iowa in the early 1920s, even if he didn't study with him, as Chen Changheng did.

race efficiency. Xu renders the above principle into a formula: “Social progress = Race energy – (Cost of subsistence + Cost of population growth),” or, symbolically:

$$A = X - (Y + Z)$$

Obviously one can't add and subtract these things. The first step, then, is to determine a common unit which can serve as an instrument of measurement, namely the element that social progress is a product of: race energy, which Xu designates as V, for vitality. “Let us take V to represent a standard unit of measurement of expenditure of racial energy” (假設用 V 代表代價單位即種族精力代價單位 *jia sheyong V daibiao daijia danwei ji zhongzu jingli daijia danwei*).<sup>26</sup> He then assumes the maximum amount of race energy available to a population, the costs of births and deaths, and the costs of subsistence to be constant across populations. (They are *not* constant, of course, as Xu is entirely aware—either across populations or within a population over time—but for the purpose of explication they may be assumed to be so.) We then assume the maximum race energy (假定各民族固定最多精力 *jiading ge minzu guding zuiduo jingli*)—X—to be 12,000V, and the cost of subsistence—Y—to be 5,000V, leaving 7,000V for the reproduction of the population—Z—and social progress—A. So, how is this 7,000V disposed of? Well, each birth “costs” 500V and each death 150V (we will see shortly what factors comprise these costs). Population growth, then—Z—will be determined as a quantity of V, as a cost against social progress. How is this determined? It is, says Xu, a function of the birth-rate and the death-rate.

$$Z = \frac{\text{cost of births} + \text{cost of deaths}}{\text{rate of population growth}}$$

Each birth and each death entails a certain expenditure of energy. Given that China has a birth rate of 30/1000 and a death rate of 27/1000, we can calculate the cost of population growth as follows:

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<sup>26</sup> Xu, *Zhongguo renkou wenti*, 1930: 83.

$$Z_{(\text{China})} = \frac{(30 \times 500) + (27 \times 150)}{3} = 6,350 \text{ V}$$

For “the races of Northern Europe” (the examples are Xu's), in which the birth rate is 20/1000 and the death rate 12/1000:

$$Z_{(\text{N. Europe})} = \frac{(20 \times 500) + (12 \times 150)}{8} = 1,475 \text{ V}$$

Substituting these values back into our original formula, we obtain our values for the surplus race energy available for social progress:

$$A_{(\text{China})} = 12,000 \text{ V} - (5,000 \text{ V} + 6,350 \text{ V}) = 650 \text{ V}$$

$$A_{(\text{N. Europe})} = 12,000 \text{ V} - (5,000 \text{ V} + 1,475 \text{ V}) = 5,525 \text{ V}$$

For each period (say, a year) in which these birth and death rates are true, then, the races of Northern Europe are 8.5 times more efficient than the Chinese at accumulating the surplus race energy needed for social progress:

$$\frac{A_{(\text{N. Europe})}}{A_{(\text{China})}} = 8.5$$

Further, at the end of the period, the growth of population thus produced can be “capitalized.”

The races of Northern Europe will have a population of 1008 instead of 1000, and if this population of 1000 had a total race energy of 12,000V, it will start the next period with 12,096V, while China will start with only 12,036V. With each year, then, China falls further and further behind.

In these formulae, vitality is not just “like,” but is actually, in fact, the *prima materia* of the social as such. And this is exactly the first sentence of Xu's book: “the population is the *original material* (原料 *yuanliao*) of society and the nation, the producer of culture and wealth.”<sup>27</sup> Vitality is the absolutely undifferentiated or non-qualified *substantia* entailed by any

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<sup>27</sup> *Ibid.*, 1.

purely quantitative relationship.

It is important to note, as well, that as far as this unit of energy,  $V$ , is concerned, its predication as *race* energy actually introduces no difference whatsoever. A unit of  $V$  in one race is exactly the same as a unit of  $V$  in another. It is absolutely universal across populations, and its universality, its function, precisely, as a *general equivalent*, is the very condition of the comparability of putatively qualitatively different races. Vitality is here both constitutive of a race, since a race is nothing other than a certain organization of it, *and* absolutely non-determinate, since nothing actually differentiates the vitality of one race from that of another.

This is not the final word, of course. It suffices merely to establish the grounds of the real issue, which is the analysis of the determinants of these values and the relations which can be established between them, and the development of techniques for managing and improving them. But what does this have to do with the family? Why does this discussion occur where it does? Well, we noted that an average birth costs a population  $500V$ . If this could be reduced to, say,  $450V$ , this would immediately add  $1,500V$  to the surplus available for social progress in China.<sup>28</sup> When we disaggregate the elements of this cost, we get the following:

1. For three or four months preceding birth, the mother cannot handle her normal work
2. For three or four months after birth, the mother cannot work at all
3. For about one year around birth, the mother is more prone to illnesses
4. The medical and other costs arising from the birth itself
5. The cost of raising the child
6. The burden on the father<sup>29</sup>

Each term in this series can be economized. Most obviously, the prevention of a pregnancy or a birth, by whatever means (and these means are manifold: birth control, raising the age of marriage, lowering the rate of marriage, and so on) would have the effect of reducing the birth-

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<sup>28</sup> The same principle applies, of course, to any term of the equation.

<sup>29</sup> *Ibid.*, 83.

rate, thus “saving” these costs for other uses. But if all other factors are held constant, one notes that race efficiency goes *down*. A reduction in the number of births, then, must be matched by a greater reduction in the number of deaths for efficiency to improve. As the birth-rate drops to the level of the death-rate or falls below it, race efficiency becomes impossible to calculate: the formula becomes nonsensical. If the number of births from our example above is reduced to 28, for instance, producing a growth rate of 1, then the cost of every birth and death is simply summed, and this produces a value for Z of 18,050V. This makes the value of A (social progress) *negative* 11,050V. A birth-rate of 27.1 produces the amazing cost of 176,000V for each 1/1000 increment. A growth rate of zero is a simple absurdity.

The problem can be approached from other angles. Keeping all other factors constant, reducing the cost of a birth raises race efficiency. The probability of illness in the mother, for example, might be reduced by improving general levels of nutrition, which would involve adjustments to the food system,<sup>30</sup> or through vaccination, which would entail the emplacement of a public health system; the medical costs of a birth might be reduced through the distribution of hospitals and economies of scale in the production and distribution of medical supplies;<sup>31</sup> that of raising a child might be reduced, as Yi Jiayue suggests,<sup>32</sup> by delegating certain aspects of it to institutions other than the family, like schools or daycares or communal kitchens—all reforms that had in any case been anticipated by the family reform movement; and so on. *Any* adjustment, finally—positive or negative, toward greater or lesser efficiency—in any one of the population, the family, or the economy automatically and instantaneously affects all the others: every element of a social organization is linked together by their common embodiment of this productive force, V. Race efficiency is a function, in the strictest possible sense, of the reciprocal

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30 The economics of poor families' relations to the food system in China was the subject of numerous studies of “family budgets” in the 1920s and 1930s, in both urban and rural areas. See n. 49 below.

31 I return to these issues in Chapter Four.

32 See previous chapter, p. 12–13.

organization of the family and the general economy of social life. Xu's equation, then, defines an intrinsically totalizing field of governability which can bring into the agenda of government any part of the productive activity of any population. This is a true socialization of vital production: *the familial oekonomia of reproduction is linked to and made dependent upon a truly social organization of production and division of labour.*

Xu focuses only on the birth-rate and the determinants of the cost of each birth, but it is enough to establish the reasoning. What happens if one focuses on death? We have, on the one hand, the death-rate, and on the other, the cost of each death: two discrete factors which lay different objects of concern before the investigator. How might one reduce these? The action of private, semi-public, and public health systems, on the one hand, will lower the death rate, which, the birth-rate remaining constant, will improve a race's efficiency. (These entail their own costs in terms of V, of course, but the disposal of scarce resources in these activities will diminish the expenditures incurred through other activities to a greater degree.) This effects a transfer of V from the cost of deaths—borne by families—to Y: social expenditure on economic reproduction. Expenditures are transferred from the reproduction side to the social division of labour side, and thereby economized upon, because a wide distribution of public health technologies and practices produces more health per unit of expenditure than families left to themselves. Or families might devote fewer resources to the “useless expenditure” of burial practices, thus reducing the cost of each death. Which then connects this logic to the widely-noted colonial and semicolonial middle-class autocritique of extravagance and ill-considered expenditure.<sup>33</sup> Pushing this logic to its limit (which there is no reason internal to the logic not to

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33 On this discourse in India, see, for instance, Mytheli Sreenivas, *Wives, Widows, and Concubines: The Conjugal Family Ideal in Colonial India*, 2008; Rochona Majumdar, *Marriage and Modernity: Family Values in Colonial Bengal*, 2009; and Ritu Birla, *Stages of Capital: Law, Culture, and Market Governance in Late Colonial India*, 2009, esp. 199–231. For an analysis of its Egyptian iteration, see Omnia El Shakry, *The Great Social Laboratory: Subjects of Knowledge in Colonial and Postcolonial Egypt*, 2007: 165–194. Some relevant studies for China include Paul J. Bailey, “Active Citizen or Efficient Housewife? The Debate over Women's Education in Early-Twentieth-Century China,” 2000;

do): reducing the cost of each death to the absolute minimum possible—say, by industrializing the collection and cremation of corpses, or mass burial—would have only salutary effects on race efficiency, all other factors being held constant.

Embedded right at the very core or centre of the family, then, of this “minimal social unit,” one finds the immanent operation of dynamics that properly pertain to the most general socio-biological processes possible, to the race or the nation as the “maximal” social unit. And then, right at the core of *these* general socio-biological processes, one finds again the most intimate structures of the family, in their effects on the formation of the average cost of a birth or a death. This is how, to return to Charles Ellwood and Yi Jiayue, the family can appear both as “the social microcosm,” as the “primary social structure,” *and* as “social life at its maximum,” social life “in its intensest form.”<sup>34</sup> As the institution “through which, in present society, the stream of life must necessarily flow,”<sup>35</sup> the family is both the first minimal step above the threshold between nature and society (the population being that threshold itself), and the site of the most intense concentration of social problems, their point of convergence. Here, the minimal and the maximal continually change places, and turn incessantly into one another. Intervening at the level of the race necessarily entails or, even better, *is already* intervening in the family, and vice versa. Further, it means that one cannot *not* act with reference to this nexus; one can only act more or less felicitously, more or less rationally. If ever there was a case of what Foucault described as a spiral of knowledge and power, in which they constantly reinforce and extend each other, this is it.

*Any* social element, insofar as it is the product of the population—and *every* social element

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Susan Mann, “The Cult of Domesticity in Republican Shanghai’s Middle Class,” 1994; Constance Orlicki, “The Bourgeois Housewife as Laborer in Late Qing and Early Republican Shanghai,” 2003; and Helen Schneider, *Keeping the Nation’s House: Domestic Management and the Making of Modern China*, 2011.

34 Ellwood, *Sociology and Modern Social Problems*, 1910: 82.

35 *Ibid.*, 76.

can be reduced to such a product—can be determined in terms of V, and thereby by reference to its impact on race efficiency. The problem of race efficiency captures nothing less than the total organization and management of social life. How? In the following sections, I will deal with: A. the question of the race or the population (where this notion comes from, and what kind of “thing” a population is); B. the form of governing which pertains to it and its insinuation into all manner of social practices; and C. certain strands in the history of the question of efficiency.

### UBIQUITOUS LIFE

We can see how these considerations may have a wider field of applicability than Chen's or Xu's immediate concerns in these texts. The central point is, of course, *the determination of all social life in terms of vitality, and vitality as the property of a population*. Far from being a curiosity, this formulation is actually the very crux of the biopolitical matter. It enables the mathematical formalization of what is implicit in the operation of *all* population management technologies, *viz.* that population management, strictly speaking, is the management of vitality. It constitutes the true object of *all* population management, and *all* of the factors which bear upon and determine a population can ultimately be reduced to it. Okay. But what *is* it?

We can begin to answer this question by noting some important features of the preceding discussion. First, there is nothing the least bit “cultural” about Xu's calculations. They are, rather, a way of analyzing the relative contributions of any cultural or social form whatever to the production of life. Xu's formulae provide the means of discovering the differential effects of *any* social practice whatever (family organization, cultural norms, the social or technical division of labour in and between the household and society, forms of government, practices of hygiene, and so on) on the production and disposal of vital energy. They describe inefficient systems exactly as well as they do efficient systems. They provide a way to measure the effects

of  $x$  or  $y$  practice on the production of surplus race energy, recoding it as a “factor of production” of vitality, where in their real historical development they may not (indeed, most likely could not) have had any such purpose. They do not simply concern ways of organizing the deployment of scarce health resources (“How shall we distribute our efforts such that they will produce the greatest improvement out of our manifestly limited resources?”), but also enable the actual or probable effects of already-existing resources to be calculated. To be precise, they enable any practice whatever to be formalized *as a health resource*, good or bad. Thus, the question of which practices to keep, which to rationalize, and which to get rid of altogether is given to scientific, quantitative analysis. From this foundation one can construct targets, levers, and outcome expectations. This is how any social practice or system whatever can be related to the population and, conversely, how populationism can insinuate itself into any social practice or system. The notion of race efficiency is essentially a technology for revealing social systems to be bearers of vitality, interacting in a way that is, in principle if not in practice, precisely discoverable.

So, efficiency is a property of *any* population in its relationship to its reproductive and economic aspects. No variable in Xu’s analysis applies more to one race than to any other. This is also true, I think, of demographic knowledge in general: it pertains to those aspects of a population which are *universal*, not, perhaps, in substance, but in form (which distinguishes it from, say, ethnographic knowledge). Populations, that is, are not *substantially* the same: their different histories will have endowed them with different properties and proportions of qualities and so on. But they are *formally* the same: they are composed of the same basic materials, defined according to the same variables, sensitive and responsive to the same actions. The European and the Chinese populations may have wildly divergent levels of race efficiency, but they will both have *a* level of race efficiency; their age-and-sex pyramids will look different, but

they are both such that an age-and-sex pyramid is a possible representation of them; and so on. As I noted above, any substantial particularity which might differentiate one race from another is rigorously abstracted out of the discussion, making “the race” here not a race as we generally understand it but, precisely, a population. Nothing here is added to or subtracted from “population” by predicating it as “race.”

To be sure, the Chinese “race” has, according to this view, been very good from time immemorial at producing lives, but it has squandered them to an almost equal degree. What is more, the costs of these lives have been substantially greater than they needed to be, leaving less left over for the purposes of cultural construction. But there is nothing fixed about this: the surpluses of vitality produced and capitalized (and hence rates of social progress) are variable over time, and this variability is a function of social organization, *not* a function of any formal variability present in the vitality itself. This is as true for Chen Tianbiao's eugenic speculations as it is for Xu's sociological operations. However greatly the qualities present in a population's germ-plasm may vary due to the deleterious or beneficial effects of a population's history, according to Chen, the *action* of germ-plasm is identical across populations. The difference between eugenics and social reform is not to be found here.

The population is universal in another way. Here the significance of “reducing” social progress, economic life, and the rate of population growth to expressions of V must be properly grasped. All of those costs—of a birth, of a death, of economic life and social organization—constitute so much V. They are so many forms or moments through which vitality passes or flows.<sup>36</sup> Vitality is the universally present element in the series, what any social practice is an expression of, what any social practice rebounds upon. Thus, vitality is by no means the exclusive charge of the family. It is pervasive and omnipresent. It is what any social

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36 Recall the discussion of capital in the previous chapter, p. 29–30.

organization is an organization *of*. And because it is everywhere, present in every social form or practice or organization whatever, its management in principle involves nothing less than the totality of social life. Thus, the management of life is not a subset of state practices, but rather the reverse: state practices are a subset of the management of life. It is not something that the state does, but something in reference to which the state changes its form. Thus, two kinds of universality pertain to a population: it is a generic or abstract determination of human life, and it is universally present in any instance of social organization. It literally suffuses social organization from top to bottom.

If the population is the original material of a society or a nation, if it is the stuff *from which* a society is made, it must be *not yet* social. But in order that a society might be made from it, it cannot *any longer* be simply natural. It is, rather, a kind of virtuality, a skein or a surface of transference stretched between nature and society, neither social nor natural, because it is exactly the intermediary between them. It is “below” society and “above” nature. If we subtract all of the organization from a society, all of a society’s attributes, but without getting rid of it altogether—that is, without reducing it to the simply natural—the population is what remains. It is what exists at and as the very moment of transition between nature and society, but it does not yet actually constitute society, *stricto sensu*. Its breadth is sensitive and responsive to stimuli, attuned to the action of a definable series of variables, and determined by the reciprocal actions of these variables. That is, the population's breadth and development is determined by, and tenuously sustained within, the mutual interactions of its conditions of existence. The question of race efficiency ultimately arises at the point where these conditions begin to be regulated according to their effects of life's proliferation or diminishment. A population, finally, is no longer a sum of units, but *the key formal element in the nexus of intermediation between nature and society*.

Among other things, this places the problem of reproduction in an entirely new light. No longer is it just the mechanism of the passage between generations: it becomes the nexus of intermediation between a species and its members, the intermediary between “species-being” (the species in the abstract as a pool of qualities and capacities) and corporeal being (the species as instantiated in this or that individual). It is, as well, a sensitive index of the variable relations between the production of life and life’s social and environmental determinants. As such, it necessarily attracts new forms of attention, and new techniques are brought to bear on the historical materials through which it might be studied.<sup>37</sup>

If vitality is here, as Xu Shilian says, the original material of social organization, then I think we are justified in discovering in it a precise formal homology with the notion of *protoplasm*—*Urschleim*, as Lorenz Oken (1779–1851) called it, or “primordial mucus,” before Thomas Huxley (1825–1895) and Ernst Haeckel (1834–1919) popularized the former term—that played such a key organizational role in late-nineteenth century life sciences, even if it would eventually be displaced when the focus of those sciences shifted from the “ultimate physical basis” of life to the mechanisms of its transmission: Mendelian “unit characters” and so on. Protoplasm was exactly what any organism was an organization of, the original material of organic life.<sup>38</sup> The late-nineteenth century life sciences not only provided a fertile source of imagery for people concerned with the social management of populations, but they were also one of the direct sources for many of the techniques and knowledges by which that apparatus was put together, as I will show in Chapters Three and Four. We are not dealing here with a metaphoric substitution or a loan, such that what belongs “properly” to one domain of knowledge is borrowed and “misapplied” in another. It is rather that both populationism and the

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37 The sporadic development of historical demography in Republican China will be treated in the next chapter.

38 On the central importance of this concept—again, even if it eventually lost its lustre—see Robert M. Brain, “How Edvard Munch and August Strindberg Contracted Protoplasmania: Memory, Synaesthesia, and Vibratory Organism in Fin-de-Siècle Europe,” 2010.

life sciences shared, for a time, a common epistemological structure, in virtue of which concepts and techniques could move back and forth between them.<sup>39</sup>

To put it in the Kantian terms which were so central to nineteenth-century life sciences, life is *the structural effect of a certain transcendental schematization*, but one that exists historically rather than eternally.<sup>40</sup> It appears to have to exist in order for our knowledge to have any coherence at all, but it need not, in fact, exist. One could argue that the “mistake” of the early theorists of protoplasm from whose work eugenics derived so much of its lexicon and discourse was to go looking for some *thing* that would exist at what is actually a structural position, to find a “substance” which would be life and to grasp, finally, the thing as such, rather than to concern themselves with analysing and managing its specific forms. Other physiologists were perfectly happy to remain agnostic about the true nature of this life, or to position it properly *as transcendental*, and concerned themselves with the more important work of analyzing its distribution and differentiation into *forms of life*, or the “living beings” which are the variable bearers of this life. For Claude Bernard (1813–1878), for instance, a key figure in the development of experimental biology and medicine and developer of the notion of the “internal environment” (*milieu intérieur*), the “living being” is itself precisely such a transcendental.<sup>41</sup> Bernard uses a formulation which strikes us today as odd: he refers to a

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39 We will encounter a similar phenomenon with respect to political economy and the natural sciences in the early nineteenth century in Chapter Five.

40 If these terms are relatively unfamiliar to us, they were not to the biologists of the nineteenth century. I do not claim that all nineteenth-century biology was Kantian (though certainly much of it was), only that Kant was a constant point of reference.

41 See, for instance, Claude Bernard's argument about definitions of life: “All *a priori* views of life have afforded nothing but inadequate definitions, and this has to be so, because the phenomena of life can only be known *a posteriori*, like all the phenomena of nature ... Renouncing therefore the definition of the indefinable, we shall simply try to characterize living beings.” See Bernard, *Lectures on the Phenomena of Life Common to Animals and Plants*, 1878: 23. I will return to this text in another connection in Chapter Four. Incidentally, this is why it is always so difficult to determine when Bernard is speaking of an individual creature (say, *a* horse) and when of a species (*the* horse). Which is the same ambiguity I noted earlier between the population as the individual creatures that instantiate it and the population as species-being.

creature's physical form, its organization of its parts, as “*its* organism.”<sup>42</sup> The organism, then, is not the creature itself, but a *property* of the creature, specifically the organization that characterizes its *milieu interieur*. This is exactly what marks the creature itself as transcendental: if the creature's environment (what is set apart from the thing as that which is outside of it) includes both its exteriority *and* its interiority, what is left? The creature becomes, exactly like the population in our discussion above, a kind of principle of transformation, a skein, a “nothing” around and through which forces pass, but one that gives shape and position to everything. In a word, a transcendental. It is the bearer, the “subject,” neither material nor immaterial but rather *virtual*, of a set of dynamic relations. An exact formal homology, then: the organism and the environment are to a species just as society and nature are to a population.

Approaching this problem from quite another angle, the British physiologist William B. Carpenter's (1813–1885) contribution in 1850 to the debate on the matter–energy–life problem enables the clarification of another aspect of this complex of scientific and governmental problems. He denies any ontological priority or specifically formative power to a “vital agency” or “*anima*,” but notes nevertheless that living beings exhibit properties “of a nature altogether peculiar.” Physiology, according to Carpenter, has shown

a much more intimate relation than has been commonly supposed to exist between *vital* and *physical* agencies; and [proven] that, whilst the former are of a nature altogether peculiar, they are yet dependent upon conditions supplied by the latter. And the more closely these phenomena are investigated, the more intimate and uniform does that dependence appear ... [T]he *vital* forces of various kinds bear the same relation to the several *physical* forces of the inorganic world, that they bear to each other; the great and essential modification or transformation being effected by their passage, so to speak, though the germ of the organic structure, somewhat after the same fashion that heat becomes electricity when passed through certain mixtures of metals.<sup>43</sup>

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42 Recall the term that Chen Tianbiao uses for “organism”: 機體生命 *jiti shengming*, which is best translated as “life that has organization.” This does not refer to a “creature” in any normal or commonsense way (for which the term 生物 *shengwu* existed in this period, and still does), but in this precise technical way. And again, for Chen, “the race” is the species-being.

43 Carpenter, “On the Mutual Relations of the Vital and Physical Forces,” 1850: 727, emphasis in the original.

That is, if there were no physical agencies—he is here arguing against vitalism—there could be no vital ones: the latter imply the former, and are inseparable from them. It is the passage into organic (or simply organized) form that establishes a force as a vital force, and this force has no existence apart from its organization. (Just as, one notes, value expresses a material arrangement of things, and is inseparable from it.) The “point” of this passage corresponds exactly to the “zero level” of life which I identified earlier in relation to a population. But there is more: this passage from the physical (natural) to the vital (organic or social) necessarily involves

a certain *material substratum* as the medium of the change in question ... [I]t seems necessary that [a] magnetic force should act through some material substratum, in order to produce any effect upon [a] luminous ray; the intensity of the effect varying according to the medium employed.<sup>44</sup>

The population, then, is exactly this material substratum at the level of the conversion of energy from natural to social forms.

Insofar as population management concerns itself with social *organization*, then (which it manifestly does), it is a kind of physiology of social forms, as physiology is the science of organization itself. In this respect, populationism and physiology inhabit the same epistemic space. There is no question of “borrowing,” legitimate or otherwise: they derive equally from the same transcendental schematization. This schematization is one of the conditions of possibility of the problem of race efficiency.<sup>45</sup>

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44 *Ibid.*, 731.

45 There is a great deal more to say in this connection on Bernard's division of life into “latent”, “oscillating”, and “free” or “constant” forms or stages of life. These stages mark degrees of independence which a creature's organization permit it to establish with relation to its environment. In *Creative Evolution*, 1911, Henri Bergson (1859–1941) takes up this theme again, but in a particular vitalist way. One can track this trajectory through to Chen Lifu 陳立夫 (1899–2001), whose reading of Bergson inspired him to write *On Vitalism* (唯生論 *Weisheng lun*, 1934), which in turn played a key role in the ideology of the New Life Movement (新生活運動 *Xin shenghuo yundong*), launched in Nanchang, the capital city of Jiangxi province, in 1934 after the military suppression of the Jiangxi Soviet. The New Life Movement can, from this perspective, seem very like an attempt to reorganize Chinese society such that it can “advance” from the oscillating stage to the free and constant stage.

## GOVERNING INDIRECTLY

是以聖人之化世也，其解在水。

The key to the sage's transformation of the world lies in water.

— *Guanzi*

We ought not to be surprised then to find a common logic at work in ostensibly disparate domains of social activity: the family, the state, economic organization, the community, the body, the environment, and so on. I am not here writing the history of any of these “relatively autonomous spheres,” but that of a governable object and the techniques of governing brought to bear on it. Not an institution or a structure, then, but a *mode* of governing and the variety of areas into which it is installed. The fact that the state was often a principal locus for many of the practices that constitute this mode (and certainly not just in China) still does not mean that they are “state practices.” Life, then, is the problem with reference to which a form of government can traverse and reorganize an entire social formation. If the management of life encompasses *in principle* the totality of socio-biological organization, however, but it does not yet *in fact* encompass it, how does it come to do so? In fact, it is inserted into the most diverse domains of social practice, often piggybacking, as it were, on other kinds of governing activity that had been developed and elaborated to deal with areas of governmental concern that had nothing initially to do with the population, but in which the population's effects could suddenly be detected everywhere.

If, as I've suggested, the population is an historical transcendental, it cannot be grasped or managed directly, even though it is everywhere. One can only improve and adjust its conditions of existence, in the same way that one combines different metals in different proportions to produce different kinds and amounts of mechanical energy. But *everything* is a condition of its existence. Here I can restrict myself to a schematic description of how this comes to be the case,

using a few examples of the key fields involved in this “implantation of the population.” This will prepare the ground for the historical studies of the following chapters.

I noted earlier that the family constitutes a privileged nexus of relationships in Xu Shilian's analysis of race efficiency, relationships which are not at all enclosed within the family as a kind of “social unit” (社會的單位 *shehui de danwei*) or kernel, but which link the family as the point of emergence of life to the regulation of the population. The family—its level of development, its “openness” (開度 *kaidu*, or degree of responsibility) or “closedness” (閉度 *bidu*, insularity), its internal and external economy—corresponds to a nodal point in the organization of forces which impact upon the socialized production of life. The family is also important insofar as it is, by and large, the location of childbirth, and if one wants to get at childbirth in order to reduce China's “excess infant mortality” (過格嬰兒死亡 *guoge ying'er siwang*), the structures of the family become so many variables or channels along which one must move. One finds numerous instances of strategizing around this. According to Liu Ruiheng 劉瑞恆 (1890–1961), Director of the National Government's National Health Administration (衛生署 *Weishengshu*) through its various changes of name and organizational relocations from 1929 to 1936,<sup>46</sup> it was unlikely that most rural women could be convinced to have their babies in a hospital, even if there were hospitals, so some other measure was necessitated: the training, distribution, and propagandizing of “scientific” modern midwives (助產士 *zhuchanshi*) and the discouragement or suppression of

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46 The NHA was originally created in 1928 as a full-rank Ministry of Health (衛生部 *Weishengbu*) by the new Nationalist government in Nanjing. Its first Director was Chen Fangzhi 陳方之 (1884–1969), of whom more shortly. It was demoted to the rank of an “Administration” (署 *shu*) under the Ministry of Civil Affairs (內政部 *Neizhengbu*) in 1929. Then, in 1931, it was placed under the newly-created National Economic Commission, the institutional base of most of China's major economic nationalists. On the trials and tribulations of the chronically underfunded NHA, see Yip Ka-che, *Health and National Reconstruction in Nationalist China: The Development of Modern Health Services, 1928–1937*, 1995; on the NEC, see also Margherita Zanasi, *Saving the Nation: Economic Modernity in Republican China*, 2006, and Tomoko Shiroyama, *China During the Great Depression: Market, State, and the World Economy, 1929–1937*, 2008. The NEC will come up again and again in the following chapters.

“traditional” birth assistants (產婆 *chanpo*).<sup>47</sup> To this end, one of the most important functions of the Central Field Health Station (中央衛生實驗處 *Zhongyang weisheng shiyan chu*, CFHS), which he organized in Nanjing, was the support and coordination of the various midwifery schools around the country—the central school being the National First Midwifery School (國立第一助產學校 *Guoli diyi zhuchan xuexiao*) established in Beijing in 1929 under Marion Yang (楊崇瑞 *Yang Zhongrui*, 1891–1983)—and the organization of their distribution. Indeed, during the early meetings of the NEC, the training and distribution of midwives was regularly the *very first* order of business.

Life did not just live in the family, however: where it escaped the family or the family failed it—say, in the case of orphans, abandoned children, or the children of “working mothers”—procedures had to be put in place to ensure that it did not therefore go to waste. This is in fact the very rationale of “scientific charity,” which tried to reconstitute a family system that was falling apart in a new and economically viable set of relationships to its context, and which made tractability to the demands of the national economy into a condition of receiving aid.<sup>48</sup> Scientific charity placed the philanthropic impulse right in the center of the population—

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47 Liu Shijin 劉似錦, ed., *Liu Ruiheng boshi yu Zhongguo yiyao ji weisheng shiye* 劉瑞恆博士與中國醫藥及衛生事業 (*Dr. Liu Ruiheng and China's Medical and Public Health Work*), 1989: 56–57. On this history, see Tina Phillips Johnson, *Childbirth in Republican China: Delivering Modernity*, 2011.

48 I do not have the space here to develop this argument to the degree that it deserves. The transition from “traditional” Chinese philanthropic work to modern, scientific charity has been the subject of a number of studies, all of which, as far as I can see, view it in terms of developments within a single discourse—philanthropy—or as a basically inevitable aspects of some underlying process of transformation, “modernization,” rather than in terms of a general transformation of the order of knowledge and governing. I refer the reader to Zhou Qiuguang 周秋光's study of the Xiangshan Charity School (香山慈幼院 *Xiangshan ciyouyuan*), established by Xiong Xiling 熊希齡 (1870–1937) in Beijing in 1917: Zhou, *Xiong Xiling yu cishan jiaoyu shiye* 熊希齡與慈善教育事業 (*Xiong Xiling and Charitable Educational Work*), 1991. For Xiong's own description of this project, in English, see Hsiung Hsi-ling, *The Hsiang San Children's Home, Western Hills, Peking: A Historical Sketch*. 1922. See also the various studies—some ludicrously uncritical, others rather better—of Zhang Jian 張謇's (1853–1926) “Nantong Model” of urban modernization and capitalist development through comprehensively organized “charity work” (essentially, orphan and elderly workhouses): Marianne Bastid, *Aspects de la réforme de l'enseignement en Chine au début du 20e siècle, d'après les écrits de Zhang Jian*, 1971; Kathy Le Mons Walker, *Chinese Modernity and the Peasant Path*:

family–economy nexus, where it was conjoined to a proliferation of social scientific studies and discourses of general organization (recall that the Chair of the most prestigious department of sociology in China in this period was Xu Shilian): on the family and its connections to the general economy, through studies of poor families' budgets;<sup>49</sup> on industry and its effects on gender relations in poor families;<sup>50</sup> on the impact of economic position and the level of

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*Semicolonialism in the Northern Yangzi Delta*, 1999: esp. 87–155; Shao Qin, *Culturing Modernity: The Nantong Model, 1890–1930*, 2004; and so on. For the charitable activities of the major Shanghai industrialists Wang Yiting 王一亭 (1867–1938) and Rong Desheng 榮德生 (1875–1952), see Shen Kuiyi, “Wang Yiting in the Social Networks of 1910s–1930s Shanghai,” 2007; Nara Dillon, “The Politics of Philanthropy: Social Networks and Refugee Relief in Shanghai, 1932–1949,” 2007; and Shanghai daxue zhengli yanjiu xiaozu 上海大學整理研究小組, ed., *Rong Desheng yu shehui gongyi shiye* 榮德生與社會公益事業 (*Rong Desheng and Public Welfare Activities*), 2004. A useful study of the reorganization of charitable work in Ningbo in the Republican period is Sun Shan'gen 孫善根, *Minguo shiqi Ningbo cishan shiye yanjiu* 民國時期寧波慈善事業研究 (*A Study of Charitable Work in Ningbo in the Republican Period*), 2007. An interesting contemporary study written just as the transition was occurring is Tsu Yu-yue's *The Spirit of Chinese Philanthropy: A Study in Mutual Aid*, 1913. A far more recent general historical survey, which pays a good deal of attention to the organizational transformations of charitable work in the early twentieth century, is Zhou Qiuguang and Zeng Guilin 曾桂林, *Zhongguo cishan jianshi* 中國慈善簡史 (*A General History of Chinese Charity*), 2006.

49 E.g., T'ien-p'ei Meng and Sidney D. Gamble, *Prices, Wages, and the Standard of Living in Peking, 1900–1924*, 1926; L.K. Tao (陶孟和 Tao Menghe), *Livelihood in Peking: An Analysis of the Budgets of Sixty Families*, 1928; Simon Yang and L.K. Tao, *A Study of the Standard of Living of Working Families in China*, 1931 (see also Tao Menghe, *Renkou wenti* 人口問題 [*Population Problems*], 1933 on how all of this connects to the population problem); Gamble, *How Chinese Families Live in Peiping: A Study of the Income and Expenditure of 283 Chinese Families Receiving from 8.– to 550 [Dollars] Silver per Month*, 1933; Niu Nai'e 牛鼐鄂, “Beiping yiqian erbai pinhu zhi yanjiu 北平一千二百貧戶之研究 (A Study of 1,200 Poor Families in Beiping),” 1933; Herbert Day Lamson, “Gongyehua duiyu nongcun shenghuo zhi yingxiang 工業化對於農村生活之影響 (The Influence of Industrialization on Rural Life),” 1934; and a number of the surveys collected in Li Wenhai 李文海, ed., *Minguo shiqi shehui diaocha congbian* 民國時期社會調查叢編 (*Collection of Republican Period Social Surveys*), 2005, esp. Volumes 1 (Social Protection, 社會保障 *shehui baozhang*), 6 (Urban Life—Workers, 城市[勞工]生活 *chengshi [laogong] shenghuo*), and 9 (Social Organization, 社會組織 *shehui zuzhi*).

50 E.g. Fu Ruoyu 傅若愚, *Jiating gaijin yundong banfa dagang* 家庭改進運動辦法大綱 (*Outline of the Methods of the Family Reform Movement*), 1925; Gong Peizhen, “Wuxi de funü laodong jie 無錫的婦女勞動界 (The World of Wuxi Women Workers),” 1929. The extensive research work of the National Committee of the Chinese Young Women's Christian Association (中華基督教女青年會全國協會 *Zhonghua jidujiao nüqingnian hui quanguo xiehui*, CYWCA) in 1930 was primarily concerned with problems of industry, livelihood, and gender; see, for instance, the essays collected in the Annual Summary of the Association's activities, *Zhonghua jidujiao nüqingnian hui, Huiwu niaokan* 會務鳥瞰 (*A Bird's Eye View of the Activities of the Association*), 1930.

industrialization on differential levels of fertility;<sup>51</sup> on social relief and its connections to the labour-requirements of a national economy;<sup>52</sup> and so on.

It is, to be sure, a major accomplishment to elaborate the logic according to which the problem of race efficiency operates, and Xu Shilian is to be “commended” for it. But the actual calculation of these costs, as opposed to their mere positing for demonstrative purposes, relies upon a general distribution of a series of information technologies, largely under the heading “statistics,” which is something no one man can do. The ongoing registration of events performed by vital statistical agencies is only the most obvious, and will be my topic in the next chapter. Any *actual* calculation of race efficiency entails a kind of comprehensive surveillance of the events, elements, and processes which constitute it (births, deaths, diseases, and so on), as well as a new kind of analysis of the social forms which influence it (the organization of the family, the economy, environmental conditions, and so on). For vital statistics, it is enough *that* a birth or death has occurred and been registered. Its knowledge pertains to *events occurring over time, in a definite space, within a naturalized flow*: this knowledge is acquired by placing “recording devices” in certain positions *vis-à-vis* this flow, in exactly the same manner as a seismograph records geological events. This knowledge is less concerned with stasis than with movement; its domain is dynamics, not statics; its goal is not to stop the flow, but to register, direct, and channel it, to make sure it is properly “met.” Where, for late imperial statecraft, the

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51 E.g. Zhou, “Jiating zhi zuzhi ji shengming 家庭之組織及生命 (The Organization of the Family and Life),” 1922; Pan, *Zhongguo zhi jiating wenti*, 1928b; Lamson, “Differential Fertility in China,” 1935a.

52 Zhu Youyu 朱友漁, “Diaocha Shanghai bendi cishan shiye 調查上海本地慈善事業 (A Survey of Shanghai Local Charitable Work),” 1919; Ma Junwu 馬君武, *Shiyeren ji pinmin jiuji zhengce* 失業人及貧民救濟政策 (*Relief Policy for the Unemployed and the Poor*), 1925; Ke Xiangfeng 柯象峯, *Zhongguo pinqiong wenti* 中國貧窮問題 (*The Problem of Poverty in China*), 1935; Chen Lingyun 陳凌雲, *Xiandai geguo shehui jiuji* 現代各國社會救濟 (*Contemporary Social Relief in Various Countries*), 1937. I will return in more detail to the problem of how to direct the migration of “rural surplus labour-power” to where it was needed, instead of wherever displaced peasants happened to go of their own accord, in Chapter Five.

fact the people were in movement was already a sign that things had deteriorated, for this new form of populationist knowledge, such movement was their primordial condition. As Chen Fangzhi, a graduate in epidemiology from the Tokyo Imperial University Medical College (東京帝國大學醫學院 *Tōkyō teikoku daigaku igakuin*) and at the time the Director of the Central Public Health Laboratory (中央衛生試驗所長 *Zhongyang weisheng shixian suo*) in Shanghai, put it in 1933: “In humanity's endless supercession, separation and reunion, these items [marriage, divorce, birth, and death] are like ceaselessly flowing water (好像不斷的流水 *haoxiang buduan de liushui*). There is not a moment at which they are not in movement.”<sup>53</sup>

Such a shift of perspective requires that those charged with the care of the capital that is bound up in the country's people develop a new set of skills and techniques. Accomplishing and entrenching this shift was a primary task of the National Medical Association (中華醫學會 *Zhonghua yixue hui*), founded in 1915.<sup>54</sup> In the general history of public health in its relations with medicine—clearly they had *something* to do with each other—it took some time before the division of medical tasks between the care of the individual and the care of the population was worked out. The range of tasks and responsibilities in public health work was incommensurate along several dimensions with how medical practice had been organized theretofore, just as it was in China. The relationship between medicine and the field of governability to which public health refers was only worked out through a long process, which involved a progressive division of specialties, eventually to the institutionalization of this division (so that there were schools of medicine *and* schools of public health), and then a general reorganization of their relations. In China, this was a fundamental axis of antagonism between the medical modernizers who

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53 Chen, “Woguo renkou tongji shuzi zhi shangque 我國人口統計數字之商榷 (A discussion of China's population statistics figures),” 1933: 19.

54 For more on this organization and the networks through which it came into existence, see David Luesink, “Dissecting Modernity: Anatomy and Power in the Language of Science in China,” 2012.

organized themselves into the NMA and the traditional practitioners of Chinese medicine who, in a reactive gesture, organized the National Medicine Movement (國醫運動 *Guoyi yundong*).<sup>55</sup> In a report to the first meeting of the National Medical Association in 1915, Arthur Stanley (1868–1931), Commissioner of Health for the International Settlement of Shanghai (上海公共租界 *Shanghai gonggong zujie*), makes this shift of perspective into the very principle of the public health education that he felt was of primary importance to China:

A private practitioner is generally held to make a poor health officer. He has a bias towards cure which tends to obscure the main objective of the health officer. He sees *the individual rather than the mass*. About two years of the practitioner's training is wasted on the health officer and would be better devoted to parasitology, epidemiology, and systematic organisation ... The trained health officer should thoroughly understand vital statistics; transmission of communicable disease, but not necessarily its treatment; laboratory methods of diagnosis of infections; how food should be guarded against infections; how nuisances, especially rats, mosquitoes, and flies, may cause disease; and a working knowledge of sanitary engineering and law.<sup>56</sup>

But just as life is threatened on every side by encroachments into its specific domain, so, conversely, will life expand to occupy the space made available to it; or rather, it will flow into the spaces made available to it. Social organization—forms of social life, institutions, customs and habits, and so on—must cease to be checked, and begin to function as an inciting factor. This would be accomplished not simply by reducing those forces which destroy life (prevention), and neither simply by reducing how much of it is “wasted,” but also “positively,” by actively soliciting it, strengthening it, and channeling it. Here, the obsession with the infantile death rate is conjoined to the obsession with exercise and physical strength. The promotion of physical fitness (身體性能 *shenti xingneng*) became an important party–state activity under the Nationalists and in bourgeois Chinese society generally, and brought with it a whole new set of

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55 On this confrontation, see Sean Hsiang-lin Lei, “When Chinese Medicine Encountered the State: 1910–1949,” 1999.

56 Stanley, “The Sanitary Organization of China,” 1915: 1, emphasis added. I explore this in greater detail in Chapter Four.

procedures for measuring oneself in relation to statistically-defined developmental norms (軌範 *guifan*).<sup>57</sup> It is this space that the New Life Movement seeks to make into the field of mass politics.<sup>58</sup> The programmatic statement of this movement (leaving aside its Confucian-traditionalist window-dressing) might well be said to have been provided, oddly enough, by the aforementioned Irving Fisher:

Prevention is just the first step in increasing the breadth of life. Life is to be broadened not only negatively by diminishing those disabilities which now narrow it, but also positively by increasing the cultivation of vitality. Here we leave the realm of medicine and enter the realm of physical training. The first and lowest step is gymnastics ... It is an encouraging sign of the times that the ecclesiastical view of the Middle Ages, which associated saintliness with sickliness, has given way to modern “muscular Christianity,” typified in Young Men's Christian Associations.<sup>59</sup>

The very same YMCAs, that is, to whom—along with their “women's auxiliaries,” the YWCAs—leadership of the New Life Movement was delegating in early 1935. With the New Life Movement, the population becomes the subject-object of mass politics: it is both what does the work of improvement *and* what is improved.

### THE NATION AS ENTREPRENEUR OF ITSELF

We could go on, but at this point we have a certain object—vitality—and an indefinite, expandable series of sites and indirect measures through which one might intervene in this object, which is, after all, the zero level of *one's own existence*, what is entailed by literally

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57 For a contemporary discussion of this obsession, see *Reconstruction in China: A Record of Progress and Achievement in Facts and Figures*, 1935 (esp. 92–104), edited by T'ang Leang-li (湯良禮 Tang Liangli, 1901–1970), at the time Wang Jingwei 汪精衛's (1883–1944) personal secretary and Guomindang ideologue, and later Vice Minister of Propaganda in Wang's Reformed National Government (the “collaborationist” Nanjing regime during the Sino-Japanese War). For a good analysis of Tang's later fascist justifications for the Greater East Asia Co-Prosperty Sphere (大東亞共榮圈 Ch. *Da Dongya gongrong juan*, Jp. *Dai-tō-a Kyōeiken*), see Margaret Clinton, “American Imperialism and Asia's New Order: A View from Wartime Nanjing,” 2011. On physical fitness in Republican China, see especially Andrew Morris, *Marrow of the Nation: A History of Sport and Physical Culture in Republican China*, 2004.

58 See n. 45, above.

59 Fisher, *National Vitality, Its Wastes and Conservation*, 1909: 669.

everything one is and does. This suggests that what is involved here is a very particular way of relating to a “oneself,” a kind of self-relation which exists as a form of work expended on oneself in order thereby to derive the maximum possible benefits from one's capacities and possibilities: to eliminate wastage and excess expenditure, to augment the development and unfolding of beneficial traits, to make the most of them, to arrange the form of social organization such that the labour of producing life is divided in the best way possible, and so on. But interesting questions arise here: What kind of self is it that relates to itself in this way? That is, what kind of self divides itself up in this manner—into a part that rationalizes and a part that is rationalized—and works on itself in precisely this way? What or who would enact the rationalizing measures involved in this? What or who is the subject, in the grammatical sense, of this activity? What does it mean to be one's own capital? And, most importantly, at what points in history, and through what transformations, does the possibility of being this kind of subject arise in different places? When and how in China?

To answer these questions, I must go back to the so-called Marginalist Revolution in economics of the early 1870s, to the point at which the true object of that science ceased to be social processes of production, distribution, exchange, and so on—in short, the economy as it is usually understood—and became the activities and forms of calculation deployed by economic actors in disposing of scarce means to the end of maximal satisfaction. In a word, the new object of this science is *economizing*. “Economy,” for the marginalists and their successors, simply *means* efficiency, and “pure” economics would be the science of that (just as demography is the science of a population and biology is the science of life). With what is usually referred to as the “subjectivist turn,” economics becomes the science of a certain form of rationality, that of a property-owner engaged in disposing of his capital. No longer the science of the economy, economics becomes the science of economizing, of maximum efficiency itself, the science of an

activity, the *imputed subject* of which has a definite and familiar name: *homo economicus*. Here, then, we encounter another transcendental: the “subject supposed to economize.” (As an aside: this represents a particular point on the trajectory of the notion of *homo economicus*: from its original appearance as a “subject of interest” or partner in exchange—in, for example, David Hume (1711–1776), Adam Smith, and Jeremy Bentham (1748–1832)—through its appearance as a *labouring* subject—David Ricardo (1772–1823), Jean-Baptiste Say (1767–1832), and Thomas Malthus (1766–1834)—it now becomes, in the hands of the marginalists—say, Carl Menger (1840–1921), William Stanley Jevons (1835–1882), Léon Walras (1834–1910), and Vilfredo Pareto (1848–1923)—a *rationalizing* subject. Certainly each phase did not supersede or replace the previous one, but with the formation of each stage, the overall order of knowledge pertaining to this subject was reorganized.)<sup>60</sup>

That “the economic” becomes simply a name for the rationalization of capital use can be seen from Pareto’s discussion of whether population dynamics (the formation of “personal capital”) are “economic” phenomena, that is, whether they are governed by “the action of forces which assure the maximum of ophelimity,” which is Pareto’s preferred term for utility.<sup>61</sup>

If the movement of the population depends, *at least in part*, upon economic conditions, then personal capital reenters, at least in part, into the category of capital, the transformation of which, under the operation of economic forces, takes place in a manner to ensure the maximum of ophelimity.<sup>62</sup>

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60 For a very stimulating study of how this figure was coded into literary language in Republican China, see Lydia Liu’s chapter, “‘*Homo economicus*’ and the Question of Novelistic Realism” in *Translingual Practice: Literature, Culture, and Translated Modernity—China, 1900–1937*, 1995: 103–127.

Another closely related transcendental comes along with this: if the rational subject is that which organizes activity to achieve maximum efficiency, the sensations of pleasure and pain according to calculations of which activity is organized necessarily issue from *another point*. If economy is, as we will see, a “calculus of pleasure and pain” on the avowedly utilitarian model, the subject of pleasure and pain is not *itself* the rational subject, but that which “guides” action by sending forth signals of pleasure or pain. It is a kind of raw, vibrile sensitivity which can register only variable intensities and durations of a positive or negative feeling (all of this is in Jevons, *The Theory of Political Economy*, 2nd Edition, 1879: 30–39, discussing Bentham). It is no wonder, then, that behind the rational subject, one ultimately finds the *neurotic* subject.

61 Cited in Spengler, *Population Economics: Selected Essays of Joseph J. Spengler*, 1972: 68. On Pareto’s use of this obscure term, see Fisher, *The Nature of Capital and Income*, 1912: 42–43.

62 Cited in Spengler, *Population Economics*, 1972: 68.

Here, “economic forces” simply are those which ensure rational maximization. Any forces—and such forces are legion—which disturb the equilibrium which gives the maximum of ophelimity are, just by doing so, non-economic and non-rational. This is exactly how Jevons limits and defines the bounds of his science in 1866:

Economy does not treat of all human motives. There are motives nearly always present with us, arising from conscience, compassion, or from some moral or religious source, which economy cannot and does not pretend to treat.<sup>63</sup> These will remain to us as outstanding and disturbing forces; they must be treated, if at all, by other appropriate branches of knowledge.<sup>64</sup>

I only *appear* to be far away from the subject of race efficiency in China. Such a rationalizing subject is, in fact, a structural feature of the form of government we are dealing with. The relevance of these perspectives at this point lies less in what motivated them or in how they were received or transmitted than in the form of economic subject they conceived, and which they encoded, as the “point of normation,” into their analyses of economic practices. But this “point” to which practices of rationalization are referred, this form of subject, is *irreal*, a virtuality, and as such, there is no reason in principle why its “proper” domain should be a person. *Homo economicus*, in fact, is *not* a person but the imputed subject of a particular operation, which can just as legitimately be undertaken by, say, a nation, a “*natio economica*.” This is how the logic can be applied both to the minutest and most fleeting of microeconomic decisions and to the permanent totality of the field of social organization. Neoclassical economics did actually subjectivize the study of economic phenomena, *but the subject was not an individual*. It is any owner of capital. Jevons, again—whose introductory primer, *Political Economy* (1886), was translated into Chinese in 1897 as *Policies for Enriching the State and Nourishing the People* (富國養民策 *Fuguo yangmin ce*) as part of the collection *Collectanea on*

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63 The limitation of scope here would disappear with the development of neoliberalism, as economic rationality came to define the subject itself, rather than just a particular operation of it.

64 Jevons, “Brief Account of a General Mathematical Theory of Political Economy,” 1866: 282.

*Western Governance* (西政叢書 *Xizheng congshu*) compiled by Liang Qichao, and whose work thus constitutes one of the very first introductions of European economics to China<sup>65</sup>—states this in so many words:

[T]hough the theory presumes to investigate the condition of a mind, and bases upon this investigation the whole of Economics, *practically* it is an aggregate of individuals which will be treated. *The general forms of the laws of Economics are the same in the case of individuals and nations*; and, in reality, it is a law operating in the case of multitudes of individuals which gives rise to the aggregate represented in the transactions of a nation. Practically, however, it is quite *impossible* to detect the operations of general laws of this kind in the actions of one or a few individuals. The motives and conditions are so numerous and complicated, that the resulting actions have the appearance of caprice ... It would be by examining[, for example,] the average consumption of sugar in a large population that we might detect a continuous variation, connected with the variation of price by a constant law.<sup>66</sup>

One finds, then, economics stretched irreducibly between an inscrutable individual mind which cannot but appear as capricious and subject to irrational disturbances which lead it to deviate from perfect rationality (and which nonetheless purports to be the “true” object of the science), and the level of the population, at which the true rationality of the economy is revealed (“detected”) and the various disturbances are resolved. This level is known by means of the very same statistics which, from the 1830s onwards, began regularly to reveal the various phenomena which pertain to the population as I have been using this term.<sup>67</sup>

The linkage of a putatively anti-interventionist neoclassical economics to a profoundly, indeed *totally* interventionist form of social policy *vis-à-vis* the population is foundational, intrinsic, and necessary. They are co-emergent and co-constitutive. In short, they are two faces

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65 It may be the first produced by Chinese translators. In 1877, W.A.P Martin (1827–1916), at the time the President of the Qing dynasty's Translation Bureau (同文館 *Tongwenguan*), published *Policies for Enriching the Country* (富國策 *Fuguo ce*), a translation of *Manual of Political Economy* by Henry Fawcett (1833–1884), originally published in 1863. It predates Yan Fu 嚴復's translation of *The Wealth of Nations*, which is the regularly cited starting point for Chinese inculturations of Western economics, by five years. But far fewer people today have heard of Jevons than of Smith.

66 Jevons, *The Theory of Political Economy*, 1879: 16–17, emphasis added.

67 See, on this, among other works, Hacking, “Biopower and the Avalanche of Printed Numbers,” 1982; William Coleman, *Death is a Social Disease: Public Health and Political Economy in Early Industrial France*, 1982; and Foucault, *Abnormal: Lectures at the Collège de France, 1974–75*, 2003b.

of a single transformation, and cannot be understood except in terms of each other. It is not to be wondered at that this linkage persists to the present. And it is no accident of biography that Irving Fisher both provided the working definition of capital that would inhere in the neoliberal tradition right through to today—see his *The Nature of Capital and Income* (1912)<sup>68</sup>—and was deeply and professionally concerned with the form of individual life appropriate to this definition (see, for instance, his *How to Live: Rules for Healthful Living Based on Modern Science of 1917*).<sup>69</sup> Nor is his interest in the total overall organization of social and economic life in reference to “national vitality” (see *National Vitality, Its Wastes and Conservation*, 1909)<sup>70</sup> in any way incidental to this. It is difficult to to overemphasize the profound structural link between the elaboration of biopolitical technologies and the marginalist revolution, and on more than just logical grounds.<sup>71</sup>

But what is it, finally, that is rationalized? It is one's property, or, in a word, one's *capital*. This is true whether a particular capital is comprised of property, raw materials, money, skills

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68 He did not do this alone, of course: the definition of capital was a major debate in American political economy from the late-1890s to about 1912. All the major figures were involved (some of whom I will return to in Chapter Five): John B. Clark, in “Capital and Its Earnings,” 1888, “The Genesis of Capital,” 1894, and “Concerning the Nature of Capital: A Reply,” 1907; Franklin H. Giddings, “The Cost of Production of Capital,” 1889, and “The Theory of Capital,” 1890; Simon N. Patten, “The Fundamental Idea of Capital,” 1889; Eugen von Böhm-Bawerk, “Professor Giddings on the Theory of Capital,” 1890 (with James Bonar), “The Positive Theory of Capital and Its Critics,” 1895a and 1895b, “Capital and Interest Once More: I. Capital vs. Capital Goods,” 1906, and “Capital and Interest Once More: II. A Relapse to the Productivity Theory,” 1907; Thorstein Veblen, “Boehm-Bawerk's Definition of Capital, and the Source of Wages,” 1892, and “On the Nature of Capital,” 1908a, and 1908b; Herbert J. Davenport, “A New Text: Seligman: 'Social Value',” 1904; F.W. Taussig, “Capital, Interest, and Diminishing Returns,” 1908; and, of course, Fisher, “What is Capital?,” 1896, “Senses of 'Capital',” 1897a, “The Role of Capital in Economic Theory,” 1897b, “Precedents for Defining Capital,” 1904, and “Capital and Interest,” 1909.

69 This was written while he served as the Chair of the Hygiene Reference Board of the Life Extension Institute, Inc.

70 Prepared and published originally for the US Congress as the Report of the National Conservation Commission under Theodore Roosevelt. On the links between American conservationism and eugenics, see again Stern, *Eugenic Nation*, 2005.

71 As it stands, Fisher belongs entirely to the discipline of the history of economic thought, which pays no attention at all to these other aspects of his work. This is one of the advantages of the perspective taken here: that it can place Fisher's economic thought in relation to these other dimensions, as elements in the formation not of a theory of economics but of a form of governing.

and education, “social” or “cultural capital,” or anything else. In Fisher's work, the definition of capital is delinked from any particular composition, and becomes, simply, “that which” or *whatever produces an income*, regardless of its form.<sup>72</sup> This is also how the category “capitalist” is delinked from any definite social group and becomes anybody who is disposing of themselves and their possessions in a certain way. The notion of a “capitalist class” thereby becomes nonsense. And since “economy” means the maximizing of income (utility or satisfaction) from limited means, economy pertains simply to: capital. Jevons, again: “Economics ... is not solely the science of exchange or value: it is also the science of *Capitalisation*.”<sup>73</sup>

The population/race as vitality thus appears as a nation's stock of human capital, as what is organized, distributed, and recollected in order to produce an income stream, a part of which is, as it were, recapitalized in reproduction, and a part of which is redistributed for other purposes, either for consumption in some form or to be recapitalized in some other endeavor, like social progress. Since social life in its totality appears as an emergent property or a collateral effect of the flow of vitality between its various moments (X, Y, or Z, in Xu's formula), this flow which must be captured, understood, redirected, and reorganized according to economic principles, that

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72 See Fisher, “What is Capital?”, 1896 and *The Nature of Capital and Income*, 1912: 51–65. There is another stipulation in these discussions which I do not have the space to develop fully here, and that is the requirement of private ownership. Capital must, by definition, be owned; it is the very opposite of the commons and all of its “tragedies.” This gives us an insight into the bourgeois-nationalist form of anti-imperialism, for which the problem of imperialism is that what is properly China's own in fact belongs to foreign powers. The logic of capitalization goes entirely unchallenged, indeed is furthered along, when the problem is that the nation's resources, its capital, belongs to *other* capitalists. This logic is clearly at work in the reasons given for conducting a Census in 1928 (which can on this basis be fruitfully compared with those given for the 1910 Census; see previous chapter, 2–3). The Census is framed as a crucial first step in “re-collecting” what is properly China's own, but which is currently suffering under the yolk of foreign oppression. See Neizhengbu Tongjisi 內政部統計司, *Minguo shiqi nian gesheng hukou diaocha tongji baogao* 民國十七年各省戶口調查統計報告 (*Statistical Report of the 1928 All-Province Census of Households*), 1931: 1–2; see also Hou Yangfang 侯揚方, *Zhongguo renkou shi* 中國人口史, 第六卷: 1910–1953年 (*The Population History of China, Vol. 6: 1910–1953*), 2000: 62–63; and for a good discussion of the purposes that *were* fulfilled through a census universally regarded as a failure, see Tong Lam, *A Passion for Facts: Social Surveys and the Construction of the Chinese Nation-State*, 2011: 117–133. I will develop this theme through later chapters.

73 Jevons, *The Theory of Political Economy*, 1879: 241, emphasis added.

is, principles of maximum rationality.

The point is certainly not that China at long last, here and there, falteringly discovered its own rationality, and realized on this basis that the technologies the West had developed suited it as well. That is not the point at all. It is rather that by engaging these political technologies, these practices, and the virtual forms that are entailed by them, and by distributing them widely into the field of social life, China *became* “rational” in the precise neoclassical sense of maximizing the efficiency of one's disposal of one's own capital, which is, after all, simply oneself and one's property/properties. China, that is, became capitalist not simply to the degree that this or that form of industrial organization took hold there, nor simply to the degree that the social or class relations or institutions proper to capitalism arose, but also—and for present purposes, primarily—to the degree that China became an *entrepreneur of itself*, that China as the imputed subject of a set of technologies took its own biological existence as its capital, and the conditions of that existence as the target of a rationalizing activity.

Finally, then: the population functions as a surface of energy-transformation, a surface through which energy passes on its way from nature to culture, and the processes which effect this transfer can be industrialized. When what had been from time immemorial left to the blind operations of culture and geography can be taken in hand, visualized, analyzed, and systematically improved, is this not the very ascent to rationality itself, according to a certain, altogether too well-known story? New knowledges and functions both arise out of and comprise this ascent. It becomes the function of biopolitical recording technologies (vital statistics, social surveys and censuses, the tracking of migratory movements by police systems and social reformers, and so on) to measure the courses, directions, fluctuations, and varying magnitudes of the elements which comprise this process; the function of the social sciences to discover the mutual relations between them; the function of the health services to station themselves at key

points and act as relays for biopower; the function of political power in its various forms to coordinate interventions; and the function of “citizens” in their various roles to behave accordingly. In the following chapters, the focus will be on how a whole range of agencies were linked together in very particular ways by their coming to be charged with the care of the population.

### THE LOGICAL STRUCTURE OF BIOPOLITICAL GOVERNING

I have, then, to study a mode of governing which recursively produces and draws together two historical transcendentals—life and economy, both of which can be dated to the nineteenth century—not in any casual or everyday senses of these terms, but in the technical sense outlined above. The establishment and dissemination of this mode of governing takes place through the distributed operations of biology, statistics, public health, and political economy, and through the formation of a network of relations between them. No historiography which limits itself to the history of science, the history of medicine, or the history of economic thought can detect this network as anything more than a shadowy side issue or a disturbance of the proper concerns of these different domains. These transcendentals emerge as the correlates or ramifications of specific practices of knowledge. The linkage of life and economy is accomplished in and by the operation of those political technologies which take the population as their object. Population management *is* the link between life and economy, the crucible through which a social formation, now seen as the outward form of the life of a people, is *capitalized*. Having a population places China within the field of the forms of capital accumulation, which, then, different capitalists can fight over. Whether the capitalist in question is Chinese, China itself, or foreign is a matter of wholly secondary concern for an analysis conducted at this level. But, of course, it is of absolutely central concern to the bourgeois nationalist.

This ensemble is, in the first instance, a *global* apparatus whose ultimate referent is capitalism, far less a national apparatus whose ultimate referent is China. In this sense, it should not concern us that the search for the conditions of possibility of this apparatus will sometimes take us rather far from “China” as a determinate location. One finds similar conceptualizations of vitality in its relations with economic development in numerous other places in this period, all serving precisely the same function, just as one finds numerous colonial and semicolonial attempts to cover these practices of vitality-management with lexical elements from indigenous systems of thought. In China, the kind of energy that inhered in a population was translated as 精力 *jingli*, a term with a long provenance in both philosophical and popular Daoism. In India, the term selected was *shakti*,<sup>74</sup> a term that for millenia in the Hindu world has been a reference point for understandings of generativity, female power (*shakti* is both the force that suffuses everything and is personified as The Great Divine Mother), and gender (male and female being differentiable according to the way in which they possess *shakti*). In Egypt, the term settled upon in the same period was *taqh*.<sup>75</sup> But however different the lexicalizations of this apparatus, however strained, on a philosophical level, the attempts to match concepts, the apparatus functioned no less well. People could think about it what they liked, but it worked for all that. It is a kind of systemic undergirding of capitalism. It establishes—*really*, not at the level of ideas—the commensurability that enables accumulation to occur. Where this ensemble exists, there too will capitalism exist. It exists not simply where the state is progressively transformed into a instrument or agency of capital accumulation, but rather where an entire social formation is so transformed (and herein lies the locus of modernization), the state being transformed along with it. If we see in this period a surge of calls for the manner of living to be overhauled from the ground up, this is principally due, I suspect, to the fact that a whole new practical-governmental

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74 This was brought to my attention by Goswami, *Producing India*, 2004: 252–253.

75 El Shakry, *The Great Social Laboratory*, 2007.

undergirding was being set in place.

What the method I use here allows one to detect is thus a *non-phenomenal* and *formal* transformation: everything remains exactly as it was, and yet is totally changed. At no point is life or vitality grasped directly; it is made way for. Life is not such as to be capable of direct perception, and yet it is that to which all practices of governing are increasingly referred. It is their principle of systematization. Perhaps this can best be elucidated *via* a detour through a specific trajectory in Foucault's work. In *The Order of Things*, first published in 1966, his goal is to describe a particular mutation in the order of knowledge in Europe, a mutation which, he argues, produced homologous changes in a range of fields of knowledge: natural history became biology, the analysis of wealth became political economy, and general grammar became historical philology, and there was common to them all a particular “form of change,” however varied and specific each particular trajectory may have been. Out of this mutation arose the epistemological site on which the “human sciences” would be constructed. As life, labour, and speaking are determined as objects of knowledge, a new “empirico-transcendental being”<sup>76</sup> emerges, Man, who is at once the subject (transcendental and rational) and the object (empirical and more or less stupid) of these sciences whose possibility had just emerged. But the task that Foucault sets for himself in *The Order of Things* is not to “explain” this change, or rather this evident series of changes, but rather to *describe* it:

It seemed to me [in writing *The Order of Things*] that it would not be prudent for the moment to force a solution [to the problem of causality] I felt incapable, I admit, of offering: the traditional explanations [for changes in knowledge]—spirit of the time, technological or social changes, influences of various kinds—struck me for the most part as being more magical than effective. In this work, then, I left the problem of causes to one side; I chose instead to confine myself to describing the transformations themselves, thinking this would be an indispensable step if, one day, a theory of scientific change and epistemological causality was to be constructed.<sup>77</sup>

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<sup>76</sup> Foucault, *The Order of Things*, 2002: 382.

<sup>77</sup> *Ibid.*, xiii–xiv.

How, that is, can we imagine that we can explain a change when we do not yet have even an approximately clear notion of what the change is?

About ten years later, in a lecture given at the Collège de France in 1978, Foucault returns to this series of knowledges and transformations, in the context of exploring “the emergence of this absolutely new thing, the population, with the mass of juridical, political, and technical problems that it gives rise to” in precisely the same period, “around 1800.”<sup>78</sup> He runs through this series of transformations again, describing how, in each case, what might be called the intermediary problematic was precisely that of the population. The analysis of wealth—of its composition, forms, and management—becomes political economy (François Quesnay and Adam Smith are the key figures here) through the insertion of the population with all of its peculiar phenomena into the field of analysis. General grammar becomes historical philology once analysis shifts from the relationship between linguistic signs and representations in any speaking subject whatsoever to the relationship which a people maintains with its own language over time, this actually living people, with their “thick” lifeworld, being a derivative figure of the population. Finally, natural history finally “succeeds” in becoming biology when Darwin identifies the population or the species as “the element through which the milieu produces its effects on the organism”—in contrast to Lamarck (1744–1829), for whom the milieu acts *directly* on the organism, and Cuvier (1769–1832), for whom changes occur through disturbances from *outside* the immediate rationality of the natural order: catastrophes, miracles, and so on.<sup>79</sup> So, the emergence of the population as an order of rationality functioned as an “operator” (*opérateur*) of transformation in a number of different knowledges at around the same time.<sup>80</sup>

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Enough of the groundwork for this kind of argument has been laid at this point, I think, for

<sup>78</sup> Foucault, *Security, Territory, Population*, 2007: 76.

<sup>79</sup> *Ibid.*, 78.

<sup>80</sup> *Ibid.*, 79.

me to be able to return to late imperial China—specifically, the Ming (1368–1644) and Qing (1644–1911) dynasties—to explore how something like the population (but not exactly the population) functioned in the fields of governability that obtained then. If the population in late imperial China was not a biopolitical object, what kind of object was it?

**“THE BOOKKEEPING OF CHINESE HUMANITY”:  
LIVING CAPITAL AND VITAL STATISTICS**

LATE IMPERIAL POPULATION REGISTRATION

It would obviously be ludicrous to attempt to cover more than five hundred years of institutional and epistemological history—basically, population registration in the Ming and Qing dynasties—in a few pages. But that is not my goal. The outlines of that history are in any case fairly well known, or at least easy to reconstruct, and the relationships between population registration and China's changing socioeconomic and demographic structure in the late imperial period have been and continue to be explored by many scholars, for many reasons.<sup>1</sup> I will be concerned here solely with the forms of existence of knowledge concerning the number of people in China, in

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1 Restricting myself to just a selection of the important works that have come out of this scholarship, see Wang Yumin 王育民, *Zhongguo renkou shi* 中國人口史 (*The History of the Chinese Population*), 1995; Yang Zihui 楊子慧, *Zhongguo lidai renkou tongji ziliao yanjiu* 中國歷代人口統計資料研究 (*A Study of Chinese Historical Population Statistics and Materials*), 1996; James Z. Lee and Cameron D. Campbell, *Fate and Fortune in Rural China: Social Organization and Population Behavior in Liaoning, 1774–1873*, 1997; Jiang Tao 姜濤, *Renkou yu lishi: Zhongguo zhuantong renkou jiegou yanjiu* 人口與歷史: 中國傳統人口結構研究 (*Population and History: A Study of China's Traditional Demographic Structure*), 1998; William Lavelly and R. Bin Wong, “Revising the Malthusian Narrative: The Comparative Study of Population Dynamics in Late Imperial China,” 1998; Ge Jianxiong 葛劍雄 et al.'s massive six-volume history, *Zhongguo renkou shi* 中國人口史 (*The History of the Chinese Population*), 2000, which includes Cao Shuji 曹樹基, *Zhongguo renkou shi, disi juan: Ming shiqi* 中國人口史, 第四卷: 明時期 (*The History of the Population of China, Volume 4: The Ming Dynasty*), 2000a and *Zhongguo renkou shi, diwu juan: Qing shiqi* 中國人口史, 第五卷: 清時期 (*The History of the Population of China, Volume 5: The Qing Dynasty*), 2000b; Lu Yu 路遇 and Teng Zezhi 滕澤之, *Zhongguo renkou tongshi* 中國人口通史 (*A General History of the Chinese Population*), 2000; and James Z. Lee and Wang Feng, *One Quarter of Humanity: Malthusian Mythology and Chinese Realities, 1700–2000*, 2001. Linda Grove and Joseph Esherick, “From Feudalism to Capitalism: Japanese Scholarship on the Transformation of Chinese Rural Society,” 1980, provides a good survey of Japanese scholarship on population registration as it relates to structural socio-economic change in late imperial Chinese society; see also the essays translated in Linda Grove and Christian Daniels, *State and Society in China: Japanese Perspectives on Ming–Qing Social and Economic History*, 1984. Other works more directly concerned with studies of population registration itself will be cited in the discussion below.

their relation to governmental projects and to the set of concerns which define late imperial statecraft, as that existence is mediated by its particular fields of governability. Anticipating the argument, there are essentially two such forms: as a factor in the calculation of taxes, and as a quantity of subsistence need.

In 1381, after a series of local experiments, the Hongwu 洪武 emperor (r. 1368–1398), founder of the Ming dynasty, ordered the first compilation of what would remain, throughout the dynasty and well into the Qing, the basic population registers of the realm: the Yellow Registers (黃冊 *huangce*).<sup>2</sup> The organizational basis of this system was the *lijia* 里甲 apparatus, in which households were gathered into groups of 11 (more or less: there was some adjustment of this category to “natural” communities) called *jia* 甲, with one of the households—usually the richest—being charged with the responsibility to maintain the registers. Certain classes of households (for instance, those who were exceptionally poor, or who possessed no able-bodied male adults, or no land) were exempt from taxation, and thus excluded from the *jia*, but they were recorded in the registers as “attached households” (帶管戶 *daiguanhu*) or “supernumerary households” or “odds and ends” (畸零戶 *jilinghu*).<sup>3</sup> If a household in the regular registration left the area or became destitute, one of these excluded households could be brought in, so as to keep the tax burden spread among eleven households. Ten of these groups were then organized

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2 For the phases of this project prior to 1381, see Sarah Schneewind, “Visions and Revisions: Village Policies of the Ming Founder in Seven Phases,” 2001. The full name of these registers was the 賦役黃冊 *fuyi huangce*, “Yellow Registers for Taxation and *Corvée*,” There are several other sites from which historical demographic data can be gleaned: the “population and grain memorials” (民數穀數奏摺 *minshu gushu zouzhe*) which came into use in 1741 for reasons that I will discuss below; the “standard figures” given in the *Handbook of Government Posts* (諸司職掌 *Zhusi zhizhang*), first compiled in 1393 and regularly updated after that—see Luan Chengxian 樂成顯, *Mingdai huangce yanjiu* 明代黃冊研究 (*Research on the Yellow Registers of the Ming Period*), 2007—and the lists of historical populations regularly compiled in local, regional, and national gazetteers throughout the late imperial period.

3 Littrup, “The Yellow Registers of the Ming Dynasty: Translation from the *Wan-li Da-Ming huidian*,” 1977: 91; Brook, “The Spatial Structure of Ming Local Administration,” 1985: 32.

into a *li* 里, with one of the ten heads of the *jia* being designated *lizhang* 里長, or Head of the *li*. This person was in turn responsible for the collection and submission of taxes, and the organization of the supply of *corvée* labour to the dynasty, and each year the position was rotated between the heads of the *jia*. Local registers were to be recompiled at ten year intervals and submitted to the county magistrate and then to the provincial *yamen* 衙門 (government office), where they would be summarized and totalled on a province-wide basis and submitted to the Ministry of Finance (戶部 *Hubu*, lit. Board of Households).<sup>4</sup> The other major administrative instruments related to taxation, which existed alongside the Yellow Registers, which were first compiled at the same time, were the so-called Fish-Scale Registers (魚鱗圖冊 *yulin tuce*), essentially cadastral surveys consisting of maps of landholdings and information related to their quality and value. These too were to be updated every ten years, to track the opening up of new land, divisions or consolidations, land sales, and so on.

These two systems constituted the basis of the dynasty's regular fiscal system. They were used to determine and to collect the land tax and the various *corvée* obligations to which people were subject. They existed in order to ensure the (theoretically) equitable distribution of the obligations owed to the central government. But how so? This question hinges on the question of what exactly was recorded in the Yellow Registers, and the nature of its relationship to “reality,” a subject of long-standing, vexatious, and to date unresolved scholarly debate. Prior to Ho Ping-ti's work, *Studies on the Population of China, 1368–1953* (1959), it was almost universally assumed that the basic and most consistent category in the Registers—*ding* (丁)—

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4 The physical registers were collected in the “Lake Posterior Archives” (湖後庫 *Huhouku*) a set of warehouses located on a series of islands in Xuanwu 玄武 Lake in Nanjing (Littrup, “The Yellow Registers of the Ming Dynasty,” 1977: 76–77), which are now occupied by children's amusement parks and kite-flyers (I have photos of my son being shown how to fly a kite and riding a mechanical panda on these islands). After each decennial registration, about 60,000 registers would be brought to these islands and stored, and students at the nearby Imperial University (國子監 *Guozijian*, also founded in 1381) were responsible for auditing them.

referred to able-bodied male adults between the ages of 16 and 60 *sui* 歲 (roughly, years old), and historical-demographic research centered on the problem of finding the correct multiplier(s) by which one could attain a reasonably accurate, if approximate, estimate of the number of people in China at any given time. Certainly the *ding* was actually *originally* a category of population. That is, it referred to an actual category of people: those liable to *corvée*. Very early on, though, according to Ho, it came to designate an abstract unit of *corvée* obligation. The number of *ding* assigned to a household through the *lijia* system came to have nothing to do with any actual number of able-bodied male adults, but was instead the result of a calculation in which the number of such persons was only one variable, the others being such things as “the amount of landed property, other sources of income, domestic servants, horses, etc.”<sup>5</sup> The *ding* represented a quantity of liability for service in any of the many tasks associated with maintaining the conditions for normal production and reproduction (staffing postal stations, serving as prison guards, labouring on public works projects, assisting in the transportation of tax grain, and so on), and the amount of this liability (the “unit value” of one *ding*) varied from place to place, again according to a number of variables. Nothing in all of this designates anything like abstract units of population. They are units of liability for work or its equivalent in money or some other product. They were assigned according to particular labour requirements of the state from time to time. They were not measurements of how much work people *could* do. When enumerations were conducted, it was in order to establish *one* of the factors of these calculations. This, then, is the first form of existence of the population: as a kind of taxable quantity, but more accurately, as a factor in a complex series of calculations by which taxes and obligations were assessed and collected.

In the sixteenth and seventeenth centuries, the increasing monetization of both the general

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5 Ho, *Studies on the Population of China*, 1959: 26.

economy and of governmental finance contributed to a shift in taxation from contributions in kind and *corvée* service toward their commutation into silver payments. This series of reforms, which was eventually formalized as the Single-Whip Method (一條鞭法 *yitiao bianfa*) during the Grand Secretaryship of Zhang Juzheng 張居正 (1525–1582), was implemented in different places at different times, becoming empire-wide policy in 1581.<sup>6</sup> Now, instead of collecting sundry items and allocating a variety of different tasks, the central government collected silver, which it then used to pay for services and to purchase the articles it needed on the market. Under this system, *ding* obligations were folded into the land-tax assessment, which was then converted according to set rates into a single silver payment. In the seventeenth century, across the divide of the change of dynasty in 1644, *corvée* gradually fell out of use, to be replaced by the staffing of low-level government posts by paid employees. The collection of taxes became the responsibility of local officials rather than of the *lizhang* as a representative of local society. As the *lijia* and the Yellow Registers systems gradually ceased to function, then, they also lost their *raison d'etre* as instruments of fiscal control.

In its early years, the Qing dynasty adopted the *lijia* system for its Han Chinese subjects, and in 1651 used the late Ming Yellow Registers as the basis for the establishment of basic quotas of taxation. But the general monetization of the economy proceeded apace, and Qing emperors continued to chip away at the foundations of the system the Yellow Registers defined. The Kangxi 康熙 emperor (r. 1661–1722), for instance, having presided over the pacification of the empire in its early decades, and considering its fiscal base secure, declared in 1712 that taxes would be forever frozen, thus eliminating any reason to maintain accurate records at the county level, since nothing changed whether they existed or not. The gathering of the functions traditionally serviced by *corvée* obligations into the hands of paid employees of the central

6 Liang Fangzhong 梁方仲, *The Single-Whip Method of Taxation in China*, 1956, remains the only full-length study of this process in English, but it suffices for present purposes.

government was given a powerful impetus by the reforms of the Yongzheng 雍正 emperor (r. 1723–1735) in the 1720s and 30s concerning centralization of authority and fiscal rationalization.<sup>7</sup> The Yellow Registers continued to be used, but they gradually evolved into a kind of omnibus compilation of available and taxable resources of whatever kind—silver and grain stocks, transport infrastructure, military installations and weapons, salt, tea, assorted valuables, and so on—with *ding* being only one of these items, with no special privilege.<sup>8</sup> The *lijia* continued to exist in a moribund state until 1772, when it was decided that it maintained no trace of usefulness.<sup>9</sup>

The pacification of the realm and the security of the dynasty, accomplished under the Kangxi emperor, and the Yongzheng emperor's successes in terms of administrative efficiency, formed the background to a significant shift of emphasis in the concerns of officials by the 1730s. Under the new Qianlong 乾隆 emperor (r. 1735–1796), the central government undertook, in a massive and historically unprecedented way, to provide for the subsistence of its subjects, where these subjects were unable to do it by themselves, across the entire realm. The result was the grand structure of the state civilian granary system.<sup>10</sup> It is here that we find the

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7 On this, see Pei Huang, *Autocracy at Work: A Study of the Yung-cheng Period, 1723–1735*, 1974, and Madeleine Zelin, *The Magistrate's Tael: Rationalizing Fiscal Reform in Eighteenth Century Ch'ing China*, 1985.

8 See, for instance, the classification developed by the compilers of the *Qing neige jiucang hanwen huangce lianhe mulu* 清內閣舊藏漢文黃冊聯合目錄 (*Union Catalogue of Surviving Chinese-language Yellow Registers of the Qing Grand Secretariat*), 1947.

9 Ch'ü T'ung-tsu, *Local Government in China Under the Ch'ing*, 1962: 150; Ho, *Studies on the Population of China*, 1959: 41.

10 The essential work here is Pierre-Étienne Will and R. Bin Wong, *Nourish the People: The State Civilian Granary System in China, 1650–1850*, 1991; on the relations between this system and general conceptions of governmental responsibility, see Pierre-Étienne Will, *Bureaucracy and Famine in Eighteenth-Century China*, 1990. The practice of state-organized grain price-equalization purchases in China goes back as far as the reforms initiated under Duke Huan of Qi 齊桓公 (d. c. 643 BCE) by Guan Zhong 管仲 (better known as Guanzi 管子, c. 720–645 BCE); in the Western Han 西漢 dynasty (206 BCE–9 CE), a series of ministers from Sang Hongyang 桑弘羊 (c. 152–80 BCE) to Geng Shoushang 耿壽昌 (fl. 75–49 BCE) developed a fairly comprehensive system of grain transfer and storage and famine relief known as the “Method of the Balanced Standard” (均輸法 *junshu fa*). This is extensively discussed in Sima Qian 司馬遷's (c. 145–86 BCE) *Records of the Grand*

population's second form of existence: as a quantity of subsistence need.

The development of this system of large-scale grain storage and interregional transfer required the creation of a new kind of population registers, and the machinery used to produce these records was not the *lijia* system (essentially a fiscal system), but the *baojia* 保甲 system, which was a mutual responsibility and protection system. While the *lijia* system continued to exist with reference to taxation, the *baojia* was now charged with the responsibility of producing the population returns on the basis of which grain-storage targets would be set. The result was the aforementioned population and grain memorials (*minshu gushu zouzhe*), initiated as a reporting system in 1741. These were reports of “actual population”—or at least of those portions of the population toward which the government felt an obligation to provide subsistence, which is not quite the population in its modern sense—and grain holdings. Here again, the populousness of an area entered into a complex series of calculations designed to ensure the maximum of security with the least possible disruption of normal production.<sup>11</sup> Other factors in these equations included the type of food production normal in a given area (different kinds of food entered into the calculations at different “rates of conversion”), its position in the administrative hierarchy (a higher position yielding a higher factor in the determination of quotas), its accessibility to major transport routes (more accessible places received lower quotas), the productivity of the land (higher productivity meant lower quotas), and the relative distribution of agricultural and non-agricultural households (higher proportions of the latter meant higher quotas). The number of people was used to calibrate grain holdings, but never were grain holdings (or any other factors) used to calibrate population. The number of people

*Historian* (史記 *Shiji*), translated in Watson, *Records of the Grand Historian: Han Dynasty*, by Sima Qian, 1993: 68–83. Ambitious reformers throughout the rest of imperial Chinese history referred regularly back to these precedents in proposing their own projects. The Qing system was, therefore, not without its precedents, but it operated at a wholly new level of scale and organizational fineness, and it worked for a longer period than any previous system.

11 On the court debates in the 1740s about how to achieve this balance, see Helen Dunstan, *State or Merchant?: Political Economy and Political Process in 1740s China*, 2006.

was a datum, not an object of intervention.

In 1772, the *lijia* system was finally abolished, and the Yellow Registers ceased to be used as enumerations of population. In 1775, the Qianlong emperor ordered a comprehensive reform of the *baojia* system and its associated forms of reporting, insisting that the *minshu gushu* memorials be based on complete and accurate enumerations.<sup>12</sup> Theoretically, these enumerations continued on an annual basis until the 1850s, with the outbreak of the Taiping Rebellion (太平之亂 *Taiping zhi luan*, 1851–1864). At any rate, a complete series of national returns exists for the full period 1776–1851, which show “demographically plausible” and relatively consistent rates of growth (this plausibility being a function of historical comparison to “normal populations”), suggesting that at least the same thing was being counted across this period, even if that thing wasn't exactly the population.<sup>13</sup> How much of these totals was arrived at by actual enumeration is, however, impossible to determine, and it likely became a lesser proportion of the total over time.

The Taiping Rebellion put an end to the series of relatively complete national enumerations. After it, the granary system was no more, and regular agricultural taxation had, in most cases, become a provincial rather than a central prerogative. At this point, a combination of developments prompted the central government to adopt fiscal strategies which had little directly to do with population (the commodity transit taxes grouped under the term *lijin* 釐金, investment in infrastructural projects with short-term returns, and so on): the drains on the

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<sup>12</sup> Ho, *Studies on the Population of China*, 1959: 45. It is unlikely to be a coincidence that in 1774, a significant rebellion—the Wang Lun 王倫 uprising discussed in Susan Naquin, *Shantung Rebellion: The Wang Lun Uprising of 1774*, 1981—had occurred in Shandong province (quite close to the capital, and along major transport routes), during which the effectiveness of the Qing response had been drastically reduced by the disarray existing in the *baojia* system, but I have not yet seen any direct evidence of this. As a result of the 1775 reform, the “population of China” jumped 20% in one year (from 221,027,224 in 1775 to 264,561,355 in 1776); Bielenstein, *Chinese Historical Demography, A.D. 2–1982*, 1987: 104.

<sup>13</sup> Bielenstein, *Chinese Historical Demography*, 1987: 97–111.

treasury created by indemnities imposed by Western imperialist powers after their various attacks on the Qing, the Qing's inability to utilize tariff protections under the terms of the various treaties it had signed,<sup>14</sup> and the fiscal crisis worsened on the one hand by the drain of the tax currency, silver, out of China by the opium trade and on the other by the loss or collapse of the tax base by the destruction of the ongoing mid-century wars.<sup>15</sup> In 1898, the central government ceased to require any reporting of population figures, stamping as an official fact what had been the case for a long time: that its systems of population registration were non-functioning.<sup>16</sup> This remained the case until preparations began for the 1910 census, which, as I argued Chapter One, was in any case not yet biopolitical.

#### THE CREATION OF VITAL STATISTICAL CAPACITY

Before 1912, then, strictly speaking, not a single vital statistic had ever been recorded by a central state agency in China. In that year, a census was conducted by the new Republican government which covered most of the provinces of China Proper and some territories, in which provision was made for the first time for the submission of annual returns of births, deaths, and causes of death according to a short schedule. For all of China's long and sophisticated history of household registration, this was the first time that “vital processes” entered into the mathematico-administrative machinery of government. By the middle of the 1930s they were thoroughly ensconced in the structures of nationalist governing. The consequences of this transition will be discussed below, but for now, let us simply note the 1912 census as one of the “sprouts” of populationism in modern China. The principal issue here will be the coding of the

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14 In 1854, with the creation of the China Maritime Customs Service (海關總稅務司署 *Haiguan zong shuiwusi shu*), the Qing lost the ability even to distribute these funds as they might have wished.

15 The best description of this process, and of the shifts in state priorities and the logics of state action that it produced, remains Pomeranz, *The Making of a Hinterland*, 1993, though there is a vast literature on state transformations and “failures” in this period (failures only being such in relation to particular notions of what states ought to do or be for).

16 Bielenstein, *Chinese Historical Demography*, 1987: 111.

population under the sign of *value*, and the organization of interventions into the population according to this category. How the population of China came to be the kind of thing that could have this attribute has not been explained, presumably because it has seemed so obvious that it *would* have it, either for the Republican period or for the much better studied transformations in population management since late 1970s, when the population once again came to have it.<sup>17</sup> It is an important question, even the central question, because the Chinese population first emerged as already, intrinsically, and primarily a problem of capitalist development—that form of development (but is there any other?) that proceeds from this very category. This will be shown in this chapter by an analysis of the form of vital statistical knowledge in China.

My goals here are the following:

1. To analyze how the emergence and spread of vital statistics in Republican China produced a specific natural-scientific conception of a population, and how this conception played a key role in reorganizing governing as a social practice in this period, in a way that has hitherto not been analyzed in any systematic way.
2. To attain a clearer conception of the “vitality” that is recorded by these statistics. It will become clearer that the very crux of the problem of population lies here, in this idea of vitality.
3. To relate this natural-scientific conception of the population to the transformation of the basic logic of governing in China discussed in Chapter One. The transition from one system of population registration to another is related to this broader shift.

Thus, the problem of population did not arise because anyone “realized” anything on the basis of having new data or more information. It arose out of a transformation in the *kind* of knowledge that people had, in the criteria according to which information counted as information, and this cannot be explained by any change at the level of the “real” population. It existed, in the first instance, as a new set of questions that became possible on the basis of a new image of the population, an image that was generated by the recursive and constant operations of a specific statistical system, and that would disappear as soon as it stopped operating.

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<sup>17</sup> I return to this in the Conclusion.

Some sense of the kinds of activities that came under the rubric of vital statistics in China in the 1920s and 1930s is necessary, but no claim is made here that this is an exhaustive survey. The annual survey initiated by the new Republican government in 1912 covered all provinces except Guangdong, Anhui, and Jiangxi, and included the territories of the Northeast (Fengtian, Jilin, and Heilongjiang), Suiyuan, and Xinjiang.<sup>18</sup> It provided for the registration of households and for annual returns by district of births, deaths, and causes of death according to a short schedule. Where police systems had been established, surveying and reporting duties were assigned to them; where they had not, they were assigned to the local county magistrate, and detailed administrative procedures were provided in each case.<sup>19</sup> The classification of causes of death was very simple:

1. Accident
2. Suicide
3. Disease (Cholera, Dysentery, Typhoid, Smallpox, Measles, Scarlet fever, Diphtheria, Bubonic plague, Other diseases, Unknown)
4. Prenatal weakness and deformity
5. Old age
6. Unknown cause

Such a classification would clearly prove totally unsatisfactory to a regime of medical knowledge organized around the International Classification of Causes of Death (ICCD—the so-called Bertillon Classification, first adopted by the International Congress of Hygiene and Demography and the US Census Bureau in 1900),<sup>20</sup> and the epistemological and practical problems of disease nomenclature and recognition presented major challenges to health

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18 Thus excluding Tibet and Qinghai.

19 These procedures are provided in full in N.A., *Xianzhi hukou biancha guize, jingchating hukou biancha guize* 縣治戶口編查規則, 警察廳戶口編查規則 (*Regulations for the Registration of Households by County Administrations and by Police Departments*), 1915; see also D.K. Lieu, “The 1912 Census of China” in *Chinese Population Statistics, 1930–31*: 1–27; Hou Yangfang, *Zhongguo renkou shi* 中國人口史, 第六卷: 1910–1953年, 2000: 56–62, 431.

20 King, *Manual of the International Classification of Causes of Death*, 1902: 5–9.

reformers well into the 1930s, as we will see in the next section. After the central government effectively collapsed in 1916 and provinces largely stopped reporting anything, the only province to continue to register births, deaths, and diseases was the relatively peripheral Shanxi, under the “enlightened despotism” of Yan Xishan 閻錫山 (1883–1960), the “good” warlord,<sup>21</sup> and this first attempt at vital statistical work came to an ignominious end. Advocacy largely fell to the recently formed National Medical Association<sup>22</sup> which, together with the various elite-organized municipal and provincial Public Health Associations (衛生會 *Weisheng hui*) that were also forming in this period, pressed for vital statistics to be collected through the following years.

Starting again in the 1920s, the collection of vital data about Chinese populations spread rapidly, with the development of departments of sociology in various universities, coordinated public-private health experiments, the creation of municipal and provincial public health departments and of a number of “experimental counties” (實驗縣 *shiyan xian*), the spread and increasing organizational systematization of the rural reconstruction movement,<sup>23</sup> and so on. By 1928, seven major cities—Nanjing, Beiping (Beijing),<sup>24</sup> Shanghai, Tianjin, Hankou, Guangzhou, and Hangzhou—had functioning vital registration systems, and by 1935 a number of others had

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21 Xu, *Zhongguo renkou wenti*, 1930: 28.

22 See above, p. 81.

23 As the flagship county of the Mass Education Movement (平民教育運動 *Pingmin jiaoyu yundong*) under the leadership of James Yen (晏陽初 Yan Yangchu, 1890–1990), Dingxian 定縣 (Ting Hsien) in Hebei is by far the most famous and well-studied of these experimental counties, but there were a number of other such counties and “areas” in the 1930s: for instance, Zouping 鄒平 and Heze 荷澤 Counties and the Longshan Experimental Area (龍山實驗區 *Longshan shiyan qu*) in Shandong, Xindu 新都 County in Sichuan, and Hengshan 衡山 County in Hunan.

24 Beiping's registration system had been operating since 1925, under the joint management of the municipal government and the Peking Union Medical College (北京協和醫學院 *Beijing xiehe yixueyuan*, PUMC), established in 1915 with funds provided by the Rockefeller Foundation. The Beiping First Public Health Demonstration Area (北平市公安局第一衛生區 *Beiping shi gong'an ju diyi weisheng qu*) played an important role as a training ground for many of the experts who would staff the National Health Administration in the 1930s, and as a key center of data collection.

them as well.<sup>25</sup> From 1928, the National Health Administration—staffed largely by senior members of the National Medical Association—undertook many projects to increase China's institutional capacity for vital statistical work: courses at the Central Field Health Station for middle- and high-level health administrators, and programs at the National Central University (國立中央大學 *Guoli zhongyang daxue*), also in Nanjing, for lower-level registration staff (who would be sent out to the experimental counties as part of their training); coordination of centers of data accumulation through the activities of professional associations and university statistics programs; state and university cooperation with international organizations like the League of Nations Health Organization (LNHO), the Rockefeller Foundation, the Scripps Foundation for Research in Population Problems, and the Milbank Memorial Fund; participation in international professional and scholarly bodies such as the International Statistical Institute and the International Union for the Scientific Investigation of Population Problems;<sup>26</sup> fellowships organized through the Ministry of Education (教育部 *Jiaoyubu*) and the China Foundation for Promotion of Education and Culture (中華教育文化基金董事會 *Zhonghua jiaoyu wenhua jijin dongshi hui*)<sup>27</sup> to the Harvard School of Public Health, the Johns Hopkins School of Hygiene and Public Health, and the London School of Hygiene and Tropical Medicine; financial and logistical support of local reconstruction initiatives; attempts to coordinate centrally the distribution of graduates of the Administration's courses; and so on. A veritable who's who of

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25 E.g., Kaifeng, Chongqing, Changsha, Nanchang, Jinan, and Fuzhou; China Neizhengbu, *Weisheng tongji* 衛生統計 (*Public Health Statistics*), 1938: 2–15.

26 One of the chief architects and the first Chairman of the IUSIPP (it still exists) was Raymond Pearl (1879–1940), at the time the Director of the Institute for Biological Research at the Johns Hopkins University, and prior to that a Professor and Director of Studies at the Johns Hopkins School of Hygiene and Public Health. On the formation of the IUSIPP, see Pearl, “International Population Union,” 1928b. We will hear more of Pearl shortly, who maintained an active correspondence with Margaret Sanger in the 1920s, and who sat on the Advisory Board of her Birth Control Clinical Research Bureau (see McCann, *Birth Control Politics in the United States, 1916–1945*, 1994: 84–95).

27 This body was created in 1925 to administer the funds remitted in that year to the Chinese government from the Boxer Indemnity imposed on China by the US in 1900.

world demographic and statistical expertise were involved in this effort, either by training Chinese personnel at Western universities, consulting with the Nationalist government on issues of implementation and structure, teaching in China, or directly participating in field projects.<sup>28</sup>

In the National Public Health Law (衛生法規 *Weisheng fagui*), first promulgated in December 1928 and thereafter revised periodically, Article 6 of the first section on the regulation of midwives and Article 7 of the second section on infectious diseases made births, deaths, and infectious diseases legally reportable (“notifiable”) by doctors, nurses, midwives, police, hospitals, and cohabitants of the concerned parties.<sup>29</sup> As before, where public health or police systems existed, reports were to be submitted to them; otherwise—as was the case in rural areas almost universally, except in the experimental counties—to the staff of the county magistrate. Members of the National Medical Association working in the Beiping First Public Health Demonstration Area, staff of the PUMC, and of the National Epidemic Prevention Bureau (中央防疫處 *Zhongyang fangyi chu*, established in Beijing in 1919 with branches in Shanghai and Guangzhou)—John B. Grant (1890–1962), Xu Shijin 許世瑾 (1903–1988), and T.F. Huang, respectively—were delegated the task of designing a classification of causes of death which conformed in its essentials to the ICCD, while taking into account China's particular “disease profile” and the organizational and educational problems associated with its adoption. The major presenting problem was the non-correspondence between, on the one hand,

28 E.g., Walter F. Willcox (1861–1964); Arthur Newsholme (1857–1943; see Anon., “Scientific Medicine in China (From an Occasional Correspondent),” 1929: 699), who taught John B. Grant at the Hopkins School before the latter oversaw the creation of the PUMC, and who himself went to China as part of a LNHO-funded survey; the Scientific Director of the Milbank Memorial Fund and Shanghai-born epidemiologist Edgar Sydenstricker (1881–1936); Ludwig Rajchman (1881–1965), Director of the LNHO, who suggested the creation of the CFHS; the Croats Andrija Stampar (1888–1958) and Berislav Borcic (b. 1891), both associated with the LNHO; and Warren S. Thompson (1887–1973), in China in the 1930s through the auspices of the Scripps Foundation. Thompson later played a central role in systematizing the “demographic transition theory” which would play such an important role in the post-World War II consolidation of global demography and modernization theory (see Thompson, *Population Problems*, 1953). See n. 34, below.

29 China Weishengbu, *Weisheng fagui, diyi ji* 衛生法規, 第一輯 (*Public Health Law, First Part*), 1928: 2–4.

the more or less “traditional,” but mostly just haphazard, classification of diseases familiar to the low-level staff who would necessarily be collecting and collating the bulk of the data, and on the other hand, the Bertillon Classification, on the basis of which alone could Chinese disease statistics be made comparable to international statistics.<sup>30</sup> This work produced the eventual classification of 108 causes of death and an abridged list of 27 principal causes of death—exactly according to the model of the ICCD—which in 1929 became the basis of the reporting system mandated under the Public Health Law, and which was adopted for use in February of that year by the National Conference of the Association of Municipal Public Health Administrations (全國市衛生行政會議 *Quanguo shi weisheng xingzheng huiyi*).<sup>31</sup> Theoretically (practice was another matter of course), reports of the incidence of disease would be submitted to the NHA on a monthly basis, where they would be summarized and published.<sup>32</sup>

All of the manifold problems encountered in collecting this data, some of which had to do with China's particular circumstances and some of which vexed the bearers of these new data collection procedures everywhere—resistance on the part of those whose life events were being registered, lack of trained staff, non-cooperation or incompetence on the part of local officials—are extremely important to the larger project of a general history of vital registration, but I have a much more limited aim here: to describe the form of the object about which it was possible to say that it was being measured more or less well.

It was not just the central government and its agencies which pressed for the creation of knowledge of the vital properties of the Chinese population. Various provincial governments operated their own health administrations independently, many of which included provisions for

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30 Grant, Huang, and Hsu, “A Preliminary Note on Classification of Causes of Death in China (with Three Tables),” 1927: 1–23.

31 See Grant and Fang, “Causes of Death for China: An Abridged Classification,” 1929: 604–07; Nanjing shi zhengfu weishengju, 1931: 84.

32 China Neizhengbu, *Weisheng tongji*, 1938: 71.



Figure 3.1 (Source: H.E. Seifert, "Life Tables for Chinese Farmers," 1935, reprinted from Buck, 1937).

the implementation or promotion of vital statistical work.<sup>33</sup> Universities threw themselves into this work as well: surveying the properties of rural populations and analysing such data as could be found about the urban middle classes was a widespread and basic activity among agronomists, sociologists, and planners.<sup>34</sup> Establishing a vital survey was one of the first steps in organizing an experimental county, and other counties became sites for further experiments. Vital information was also collected by students of the University of Nanjing's Department of Agricultural Economics (南京大學農業經濟學系 *Nanjing Daxue nongye jingjixue xi*) and local informants as part of the massive land utilization survey overseen by John Lossing Buck (1890–

33 China Neizhengbu, *Weisheng tongji*, 7–9, 19–20; see also Hu Hongji 胡鴻基, "Da Shanghai weisheng sheji yijian shu 大上海衛生設計意見書 (Suggested Plan for Implementing Public Health in Greater Shanghai)," 1928; Zheng Yaopan 鄭堯梓, "Renkou dongtai diaocha shixing yuding jihua 人口動態調查施行預定計劃 (A Plan for Implementing a Survey of Population Dynamics in Jiangsu)," 1929.

34 Many of these surveys—but by no means the majority—have recently been collected in the aforementioned Li Wenhai, ed., *Minguo shiqi shehui diaocha congbian*, 2005, esp. Vols. 4 (Population, 人口 *renkou*) and 7 (Marriage and Family, 婚姻家庭 *hunyin jiating*).

1975) from 1929 to 1933. Figure 3.1 shows the locations of these population surveys.<sup>35</sup>

References can also be found to a wide variety of other vital statistical and biometric surveys, usually of captive or at least subject populations, even if the original sources for them are lost or difficult to find: schoolchildren; orphans; recipients of charity, such as the unemployed or the elderly; prisoners; pregnant women and new mothers who sought medical help; employees of various government and Guomindang party agencies and large enterprises; and so on. Xu Shilian cites several cases of Christian organizations undertaking on their own initiative to record their vital data, and then offering it to the scientific community.<sup>36</sup> At the public health and hygiene fairs (衛生運動大會 *weisheng yundong dahui*) held in various places around the country beginning in the late 1920s, “healthy district” (地區健康 *diqu jiankang*) and “healthy baby contests” (兒童健康比賽 *ertong jiankang bisai*) were held, and adjudicated primarily on vital statistical and biometric grounds.<sup>37</sup> In tracking the distribution of this particular form of knowledge about the population, then, what we find is not an imposition from any central point, but a broad dispersion with no identifiable central tendency and no single underlying institutional matrix.

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35 Buck, *Land Utilization in China: A Study of 16,786 Farms in 168 Localities, and 38,256 Farm Families in Twenty-two Provinces in China, 1929–1933*, 1937; for other counties, see e.g., the Jiangyin county experiment, conducted 1929–32, described in Chi-ming Chiao (喬啟明 Qiao Qiming), Warren S. Thompson, and D.T. Chen, *An Experiment in the Registration of Vital Statistics in China*, 1938, which reports the results of a similar experiment (1929–1932) in Jiangyin 江陰 County, Jiangsu, conducted with financial support from the Scripps Foundation for Research in Population Problems. Warren S. Thompson was the Foundation's representative in China.

36 Xu, *Zhongguo renkou wenti*, 1930: 50.

37 Zhongguo Guomindang Zhejiang sheng zhixing weiyuanhui xuanchuanbu 中國國民黨浙江省執行委員會宣傳部 (Propaganda Department of the Zhejiang Provincial Committee of the Guomindang), *Zhejiang shenghui xiaji weisheng yundong dahui jinian ce* 浙江省會夏季運動大會紀念冊 (*Commemorative Volume of the Zhejiang Provincial Committee Summer Public Health Movement Conference*), 1931; Wang Geng 王庚, “Minzhong jiankang jiaoyu de jiben gongzuo: shengming tongji 民眾健康教育的基本工作: 生命統計 (The Fundamental Work of Mass Health Education: Vital Statistics),” 1933; for a recent analysis of this phenomenon, see Wang Zhenzhu, “Popular Magazines and the Making of a Nation: The Healthy Baby Contest Organized by *The Young Companion* in 1926–27,” 2011.

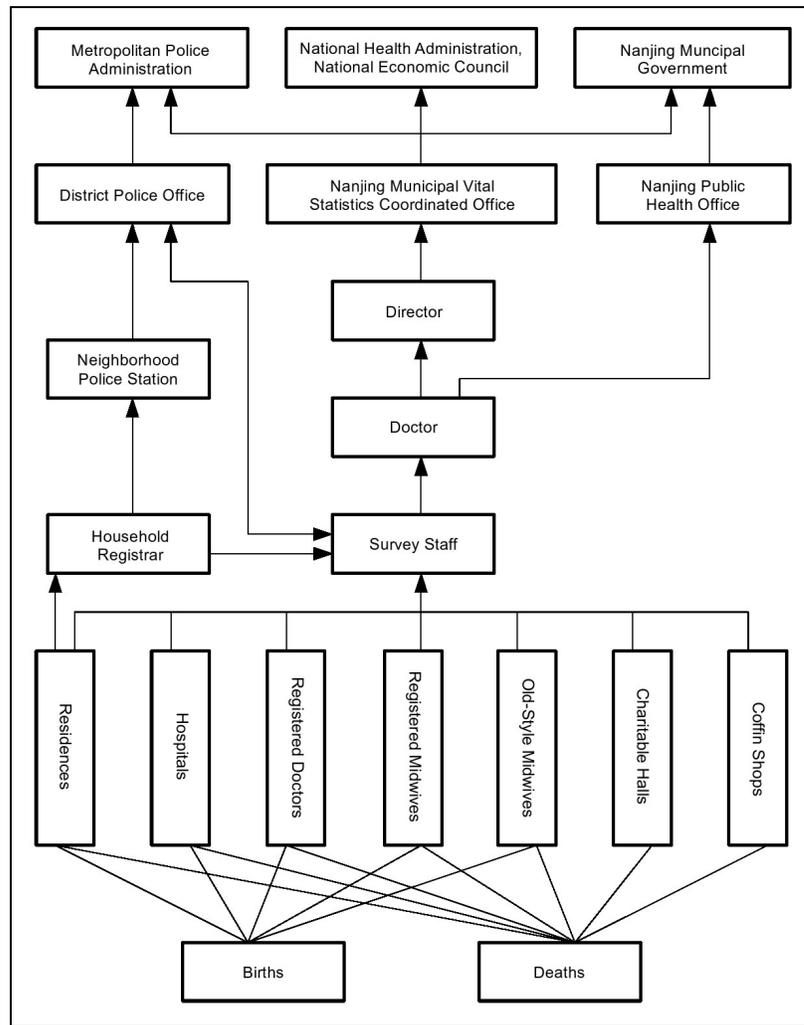


Figure 3.2: Organizational chart of the Nanjing Municipal Vital Statistics Coordinated Office (Source: *Nanjing shi shengming tongji lianhe banshichu*, 1935: 5).

It would be easy to get lost in the nebulousness of this dispersion, so I will focus on a single element of it: the Nanjing Municipal Vital Statistics Coordinated Office (南京市生命統聯合辦事處 *Nanjing shi shengming tongji lianhe banshichu*), separated off from the Public Health Office (衛生局 *Weishengju*) in 1934. The organization of this office is shown in Figure 3.2. With minor adjustments, this model was common to the vital registration systems of all the major cities: at the bottom, births and deaths; immediately above them, the sites where these events take place, or the people from whom information about them can be derived. Births and deaths in private residences would be reported to the Household Registrar (戶籍警 *hujijing*),



Figure 3.3: Group photo of the staff of the Nanjing Municipal Vital Statistics Coordinated Office (Source: Nanjing shi shengming tongji lianhe banshichu, 1935: 7).

and from there to the Neighbourhood Police Station (分駐所 *fenzhusuo*), the District Police Office (警察局 *jingchaju*), and finally to the Metropolitan Police Administration (首都警察廳 *shoudu jingchating*). The Household Registrar would also report births and deaths to the “survey staff” (調查員 *diaochayuan*) of the Vital Statistics Office (shown with their bicycles in Figure 3.3), who were charged with the responsibility of tracking births and deaths in all the places where they might occur.<sup>38</sup> These reports were then collated by a Doctor (醫師 *yishi*) and submitted to the Office's Director (主任 *zhuren*). The summary reports would then be approved by the staff of the Office and sent to three places: the Metropolitan Police Administration, the Nanjing Municipal Government (南京市政府 *Nanjing shi zhengfu*), and, most significantly for present purposes, the National Health Administration under the NEC.

<sup>38</sup> This was not a great job. They had about a week of training, including eight hours on identifying causes of death: Nanjing shi shengming tongji lianhe banshichu 南京市生命統計聯合辦事處, *Di yi nian gongzuo baogao* 第一年工作報告 (*Report of Work Done in the First Year*), 1935: 7–9.

The NHA's representative in this office was Xu Shijin 許世瑾 (1903–1988),<sup>39</sup> whom we have already encountered as one of the researchers in the disease nomenclature project at the PUMC in 1927.<sup>40</sup> Xu was concurrently employed as a professor at the CFHS, whose graduates were by 1936 employed in thirteen provinces, one territory, and three municipalities.<sup>41</sup> From 1932 to 1936, he taught the theory and practice of vital statistics at the annual CFHS public health course.<sup>42</sup> Xu received his first medical training in the early 1920s at the Beijing Professional Medical College (北京專門醫學院 *Beijing zhuanmen yixue yuan*), one of China's first and certainly one of its major Western-style medical schools.<sup>43</sup> Starting in 1925 he worked as a vital statistician in the Beiping First Public Health Demonstration Area and as an Assistant Instructor (助教 *zhujiao*) in the pathology department (病理科 *bingli ke*) at the Beijing Medical College (北京醫科大學 *Beijing yixue daxuexiao*). In 1929, he went to America to attend the Johns Hopkins University School of Public Health and Hygiene for a year, and attained a

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39 *Ibid.*, 1.

40 See n. 29, above. In Figure 3.3, Xu is the right-most person in white.

41 *The China Press*, November 11, 1936.

42 His co-instructors in that course included John B. Grant (who taught the section on Principles of Medical Reconstruction); Xu Shilian on Sociology and Social Problems; S.N. Cheer of the Medical Department, PUMC on Epidemiology; Marion Yang (楊崇瑞 *Yang Chongrui*) on Maternity and Child Health; Jin Baoshan 金寶善 (also known as P.Z. King, 1893–1984, Vice-Chair of the Central Field Health Station and co-editor, with Liu Ruiheng, of *Selected Papers by the Staff of the National Health Administration and Central Field Health Station, 1934, 1935*) and Li Ting'an 李廷安 on Public Health Administration; Yan Fuqing 顏福慶 (1882–1970, President of the National Medical Association) on Medical Education; Wu Lien-teh, Director of the National Quarantine Service (全國海港檢疫管理處 *Quanguo haigang jianyi guanli chu*) on quarantine (to whom we will return in the next chapter); Berislav Borcic from the LNHO on International Health, James Yen on Social Reconstruction, and Liang Shuming 梁漱溟 (1893–1988) on Experimental County Projects (looking ahead to Chapter Five). Other topics covered included sanitation, school health and health education, and mental hygiene; Shanghai Municipal Archives, U1–16–286 (08): “Letter from Szeming Sze to the Shanghai Municipal Public Health Department, September 18, 1936.”

43 The founder of this school was Tang Erhe 湯爾和 (1877–1940), sometime Technical Director of the National Epidemic Prevention Bureau (Zhongyang fangyichu 中央防疫處, *Zhongyang fangyichu shi-er zhou niankan* 中央防疫處十二周年刊 [*Twelfth Annual Report of the Central Epidemic Prevention Bureau*], 1931), eventual collaborator with the Japanese after 1937, and major translator of Japanese texts on eugenics into Chinese, of whom we will hear more in the next chapter. I have learned a great deal from discussing Tang with David Luesink, who probably knows more about him than anyone else.

Master's Degree in Public Health. He was trained there in the comparatively new approach to medical biometry and statistics pioneered by Raymond Pearl and Lowell J. Reed (1886–1966), who sought to combine the more traditional municipal concern with vital registration with the biometric methods developed by Pearl's mentor, Karl Pearson at the Galton Laboratory at University College London, to produce a comprehensive scientific approach to the population conceived as a health- and vitality-bearing object, which bore knowable growth dynamics not just at the level of the group, but also at the level of individuals.<sup>44</sup> Hence, Pearl's statistical studies of children's development,<sup>45</sup> which were inspired by Pearson's earlier studies,<sup>46</sup> and which Xu largely replicated when he returned to China in 1930 to assume the Directorship of the Vital Statistics Department of the Shanghai Public Health Office (上海市衛生局生命統計科 *Shanghai shi weisheng ju shengming tongjike*). The results of his study were published as “A Preliminary Study of the Heights and Weights of School-Age Children in Shanghai” (上海市學齡兒童身長體重之初步研究 *Shanghai shi xueling ertong shenchang tizhong zhi chubu yanjiu*).<sup>47</sup> Xu was also the Director of a rural vital registration experiment in Jurong County, Jiangsu, about 30 kilometers southeast of Nanjing.<sup>48</sup>

Such studies of intensive growth and of health, stature, weight, and expectation of life in China were fewer in number than general registrations, given the difficulties inherent in finding populations on which to conduct them and the greater statistical sophistication needed to do them. But they were done, usually by alumni of the Johns Hopkins program or by people they

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44 Pearl studied with Pearson at University College London, in 1905–06; when Pearson died in 1936, Pearl published a basically hagiographic obituary in the *Journal of the American Statistical Association* (Pearl, “Karl Pearson, 1857–1936,” 1936).

45 Pearl, “Some Recent Studies on Growth,” 1909.

46 E.g., Pearson, “Data for the Problem of Evolution in Man. III. On the Magnitude of Certain Coefficients of Correlation in Man, &c.,” 1900.

47 Xu, 1932.

48 The Jurong experiment is discussed in Chiao, Thompson, and Chen, *An Experiment in the Registration of Vital Statistics in China*, 1938.

had trained after returning to China. In addition to Xu Shijin's studies, we also have Marion Yang's 1932 study of pregnant women and their infants in the Beiping First Public Health Demonstration Area, conducted while she was Head of the National First Midwifery School;<sup>49</sup> the sociologist Yan Xinzhe 言心哲's (1898–1984) study of poor schoolchildren in Nanjing in 1934;<sup>50</sup> and Li Ting'an's study of seasonal variations in birthweight among children born in the PUMC Hospital, conducted while he was Director of the Shanghai Municipal Public Health Office (上海市政府衛生局 *Shanghai shi zhengfu weishengju*) and published in 1936.<sup>51</sup> Other work was done in historical demography, especially in the creation of historical life tables, for instance in 1931 by Yuan Yijin 袁貽瑾 (1899–2003), another graduate of the Hopkins program, whose materials were a family genealogy provided by his colleague in Beiping, Li Ting'an (who also taught at the CFHS with Xu Shijin);<sup>52</sup> and by Luo Zhiru 羅志如 (1902–1991), in the only book-length treatment of life tables published in Chinese during the Republican period, *Methods of Compiling Life Tables* (生命表編制法 *Shengmingbiao bianzhi fa*),<sup>53</sup> whose materials were furnished in turn by Yuan Yijin. We have as well Pan Guangdan's eugenic surveys of elite Zhejiang families and their genealogies (家譜 *jiapu*),<sup>54</sup> the methodology of which he learned while studying under C.B. Davenport (1866–1944) at the Eugenics Records Office in Coal Harbor, New York, in 1924.

The measurement of life, then, or just biometry, developed rapidly, albeit unevenly, along

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49 Yang was also a Hopkins graduate. Yang, 1932, cited in Liu, ed., *Liu Ruiheng boshi yu Zhongguo yiyao ji weisheng shiye*, 1989.

50 Yan, *Nanjing pin'er diaocha* 南京貧兒調查 (*A Survey of Poor Children in Nanjing*), 1934. I will return to Yan's other demographic writings in Chapter Five.

51 Li, "Seasonal Variation in the Birth-Weight of the Newborn," 1936.

52 Yuan, "Life Tables for a Southern Chinese Family from 1365 to 1849," published in the professional journal of the Department of Biostatistics of the Johns Hopkins School, *Human Biology*, in 1931.

53 Luo, 1934.

54 Pan, *Ming-Qing liangdai Jiaxing de wangzu* 明清兩代嘉興的望族 (*Prominent Lineages of Jiaxing in the Ming and Qing Dynasties*), 1947.

several tracks in Republican China from the mid-1920s: the ongoing registration of events occurring in a population, statistical studies of growth and development, the tentative determination of long-term dynamics, studies of heredity, and so on. It might be said at this point that the study of the Chinese population had at last placed itself on a scientific footing—that, finally, the population had been properly constituted as an object of scientific study. Certainly this is true, but that would hardly be the place to *stop* our analysis. Again, my concern here is not to determine how and when China's knowledge of itself crossed the threshold of scientificity, and thereby became “true,” but to determine the precise institutional and epistemological transformations in virtue of which such an object becomes possible, and the effects of its constitution on the organization of governing. It is not natural, after all, that governing should refer to nature, to the natural characteristics of the things it concerns itself with, that is, that it should organize itself by its relationships with natural-scientific phenomena. Not all governing does, and when it begins to—the Physiocrats take their name from this (they are those who advocate the rule of nature, *physis*), even if it cannot be said that they initiated it—it is an historical event of the first importance. In any case, being constituted as a scientific object is no simple matter, as we will see.

#### THE FORM OF VITAL STATISTICAL KNOWLEDGE

Les passions sont dans le morale ce que  
dans la physique est le mouvement.

— Helvetius, *De l'esprit*

Population registration in the Republican period was structured by a basic and entirely novel division of labour, which I must describe in some detail, because it is precisely the *differentia specifica* that generates the depth that characterizes the population in its modern form.

Population registration was broken down in the following way, and separate administrative

machineries were devoted to each aspect.<sup>55</sup> On one side stood a population's “static aspects” (靜態方面 *jingtai fangmian*), which were the objects of *enumeration*—that is, censuses, the characteristic graphic representation of which would be something like a population pyramid showing age and sex distribution at a given moment:

- A. Number of Households (戶數 *hushu*)
- B. Total Resident Population (住人口總數 *zhu renkou zongshu*)
- C. Sex Distribution (性別 *xingbie*)
- D. Age (年齡 *nianling*) or Age Distribution (年齡分配 *nianling fenpei*)
- E. Marital Status (配偶 *pei'ou*) or Marriage Distribution (結婚分配 *jiehun fenpei*)
- F. Population Density (人口密度 *renkou midu*)
- G. Occupational Distribution (職業分配 *zhiye fenpei*)

On the other side stood its “dynamic aspects” (動態方面 *dongtai fangmian*), the objects of *registration*. Knowledge of these could not be obtained by periodic enumerations, but only through a constant relation to a series of ongoing processes:

- A. Marriage (結婚 *jiehun*)
- B. Divorce (離婚 *lihun*)
- C. Change of Residence (移居 *yiju*) or Migration (遷徙 *qianxi*)
- D. Birth (出生 *chusheng*)
- E. Death (死亡 *siwang*)
- F. Disease (疾病 *jibing*)<sup>56</sup>

Population statistics, then, were divided between *states* and *flows*, photographs and movies, or balance sheets and income and expense reports. While vital statistics entailed population

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55 I rely here on Chen Fangzhi's general description, from “Woguo renkou tongji shuzi zhi shangque 我國人口統計數字之商榷 (A discussion of China's population statistics figures),” 1933, but the structure was absolutely general.

56 Other categories which were subject to ongoing registration but which were less directly vital statistical were Inheritance (承繼 *chengji*), Disappearances (失蹤 *shizong*), and Divisions of Households (分居 *fenju*).

statistics at every moment (the notion of a birth-rate per 1,000 being senseless without a knowledge of how many thousands there are), the administrative apparatuses devoted to each were maintained separately: whereas the police system or the existing state machinery was generally seconded to the task of periodic enumerations, vital registration was the province of medical personnel and their assistants, and required a constant presence and surveillance *within* the field determined by vital events.

The technical problem necessarily arises of coordinating the numbers given by a series of enumerations to those given by ongoing registration, and various techniques were devised for this task. Take, for instance, two enumerations ten years apart; the first gives a population of 70,000, the second, 100,000.<sup>57</sup> To determine the population for any point in time between enumerations, one has two options: the arithmetical method (算術的方法 *suanshu de fangfa*), in which it is assumed that the population grows by a constant *amount* throughout the interval, or the geometrical (or compound) method (幾何的方法 *jihe de fangfa*), in which the population is assumed to grow at a constant *rate*. If one has a series of birth, death, and disease returns for the full period, collated on, say, an annual basis, one can calculate the incidence rate of these events in relation to an imputed population, which will be different depending on the method of estimation used.<sup>58</sup> Incompleteness, inconstancy, or irregularity of method will, to a greater or lesser degree, nullify the value of these calculations. This was a constant source of irritation for the organizers of these systems (not just in China, but everywhere), but it is not terribly important for my purposes, because I am concerned with the *form* of the registering apparatus installed around and in a population, not whether it is registered accurately. As with any

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57 This example is from Chen Changheng, “Shengming tongji 生命統計 (Vital Statistics),” 1937: 310–312, a paper presented to the Central Statistical Association (中央統計聯合會 *Zhongyang tongji lianhehui*).

58 *Ibid.*, 312; see also Arthur Newsholme, *The Elements of Vital Statistics*, 1899: 85–91, and George C. Whipple, *Vital Statistics: An Introduction to the Science of Demography*, 1923: 139–145, for more extended analyses of the relative benefits of each method.

mathematical relation, the numbers themselves can be anything, and it doesn't change the relation between them. Further, deviations from the form, precisely by being defined as such, only confirm the operationality of the form itself.

These methods of coordinating the static and dynamic aspects of a population can certainly be used to correct each other on an ongoing basis. A given rate of growth calculated on the basis of two consecutive enumerations of equal scope and accuracy can be used to determine the completeness of records of births, deaths, and migrations. Conversely, these latter records can be used to evaluate the completeness of an enumeration. But at no point can these two aspects be resolved into one another, because they pertain to different modes of existence. *Neither can serve as the ground of the other, and there is no (known or knowable) third referent with which to ground them both*, just because that third thing is known only *through* the coordination of its static and dynamic aspects. It is impossible to fix one aspect as the measure of the other, because they adjust each other, and it is senseless to ask which direction the adjustment moves in. They are the two presenting faces of some *tertium quid*, which, though it is produced by their coordination, is never itself given to experience. (This is generally true of scientific objects, one notes, such objects, then, only being objects in a very particular and non-commonsensical way.)

Is this schematic division between statics and dynamics—in a word, mechanics—not precisely the fundamental scientific determination of nature itself? But one must be careful here, for there is not *one* mechanics, just as there is not *one* scientific determination of nature. The particular schematization of nature I am concerned with here is, in fact, surprisingly recent, being datable to the middle of the nineteenth century, and it concerns the physical theory of matter and energy. It is clearly beyond the scope of the present argument to review the history of the scientific problem of the relations between states and flows, matter and energy, from

Descartes, Newton, and Leibniz in the seventeenth century to quantum mechanics in the twentieth. The important event here is the specific transformation which then becomes the epistemological basis of the technologies whose distribution into China is the precondition of its having a population.

It was Leibniz who first developed the basic notion that we know as “energy,” in 1695, in the form of a *vis viva* (living force,  $mv^2$ ) inherent in matter.<sup>59</sup> Isaac Newton had just produced his own formalization of nature in 1687, the *Philosophiae Naturalis Principia Mathematica*, but the two systems were incommensurable, in virtue of their differing notions of substance. For Newton, forces and bodies were separate, the essence of the one being movement, of the other, extension; for Leibniz, on the other hand, *vis viva* and matter were coattributes of *substantiae*. It is well known that, for a long period, Newtonian physics prevailed as the high scientific paradigm, but Leibniz' notion of *vis viva* continued to be used in the “low” science of engineering, related as it was to the problems of work and performance. It was rediscovered for the high tradition in the middle of the nineteenth century by Hermann von Helmholtz, who used it to produce the law of the conservation of energy.<sup>60</sup> The principle itself was also fully worked out in scientific terms by the north British school of physicists led by William Rankine,<sup>61</sup> but Helmholtz put it together with Kantian metaphysics to produce the clearest philosophical statement of this new formalization, in his *On the Conservation of Energy (Über die Erhaltung der Kraft*, 1847). In this text, matter (states) and energy (flows) are put into a relation of

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59 Leibniz, *Specimen Dynamicum*, 1695; incidentally, he also first used the term “dynamics” itself to describe his method of treating this object, in *De Primae Philosophiae Emendatione et de Notione Substantiae*, 1694. On this, see Jammer, *Concepts of Force: A Study in the Foundations of Dynamics*, 1962: 158–170, and Torretti, *The Philosophy of Physics*, 1999: 33–35.

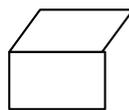
60 For more on this history, see Brain, “The Graphical Method: Inscription, Visualization, and Measurement in Nineteenth-Century Science,” 1996; Brain and Wise, “Muscles and Engines: Indicator Diagrams and Helmholtz’s Graphical Methods,” 1994.

61 See Smith, *The Science of Energy*, 1998. This question of “simultaneous discovery” is actually one of the major constituent episodes in the contemporary field of history of science. It starts with Thomas Kuhn's “Energy Conservation as an Example of Simultaneous Discovery,” 1959, and debate hasn't ceased yet.

reciprocal determination which produces nature (in his words, “the actual”), after Kant, as *transcendental*:

[A] mass of pure matter [say, the population] would as far as we and nature are concerned be a nullity, inasmuch as no action could be wrought from it either upon our organs of sense or upon the remaining portion of nature. A pure force [vitality] would be something which must have a basis, and yet which has no basis, for the basis we name matter. It would be just as erroneous to define matter as something which has an actual existence, and force as an idea with no corresponding reality. Both, on the contrary, are *abstractions from the actual*, formed in precisely similar ways.<sup>62</sup>

This is exactly the schematization we find at work in the institutional form of population registration in Republican China. Bodies and forces are related as aspects of a single reality which has been projected “behind” them. For Helmholtzian physics, matter and energy are the ways in which some transcendental *tertium quid* appears to us, given the *a priori* schematization of our perceptual apparatus. As Crosbie Smith puts it, nature (Helmholtz's “the actual”) “would now be understood neither in terms of action-at-a-distance forces nor in terms of discrete particles moving through void space, but as a universe of continuous matter possessed of kinetic energy.”<sup>63</sup> The movement from one to the other, then, is no longer a matter of passing one's attention from one thing to another, but rather of a shift of perspective, rather like the alternating concavity and convexity of this figure:



This is what makes their convertibility possible. And it is precisely the operation that Xu Shilian performs in constructing his equations of race efficiency, which I explored in the previous chapter. In order to make the equations work, each of the different material components of social life must be “reduced” to some common element, and that element is nothing other than vitality. The two series,

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62 Cited in John F. Fulton, *Selected Readings in the History of Physiology*, 1930: 21, emphasis added.  
63 Smith, *The Science of Energy*, 1998: 2.

Race Energy – (Cost of Subsistence + Cost of Population Growth) = Social Progress

and

$$12,000V - (5,000V + 6,350V) = 650V$$

are clearly not two different things. The second series of identical units *adds nothing* to the diverse particulars which comprise the first (as it would if V were a “force,” and if bodies and forces were separate), but is just their reduction to their common element, stripped of any *material* determination. Censuses and vital statistics, and the separate machineries devoted to each, refer to the same object, then, but the one to its “convex” aspect and the other to its “concave” aspect. The possibility of converting all phenomena related to the dynamic aspects of a population into so many units of vitality, and thus ultimately to a *wave-form*, depends on the inscription of this schematization into concrete, institutional form. And we can now give a name to that transcendental *X* of which vitality is the dynamic element and a population is the static element: life, which stands in the same relationship to vitality and the population as nature stands in relationship to energy and matter, waves (which are purely quantitative fluctuations) and particles (which involve problems of quality).

This likely seems very abstract, but in fact, these abstractions are *directly* at work in the most quotidian activities of the Nanjing Municipal Vital Statistics Coordinated Office. All kinds of information *could* be recorded on an ongoing basis, but what actually is recorded as relevant vital statistical data is extremely limited and specific. An example of this is given in Figure 3.4, which would be the characteristic graphical product of a vital statistics office in the same way that a population pyramid would be that of a census. What are plotted are something like the barest, most generic aspects of the events which comprise the set of registered things. Of all the elements which comprise the vital event of, say, a death, only and exactly three are retained, two of them simply by virtue of its being an event as such: its location, its time, and its totally

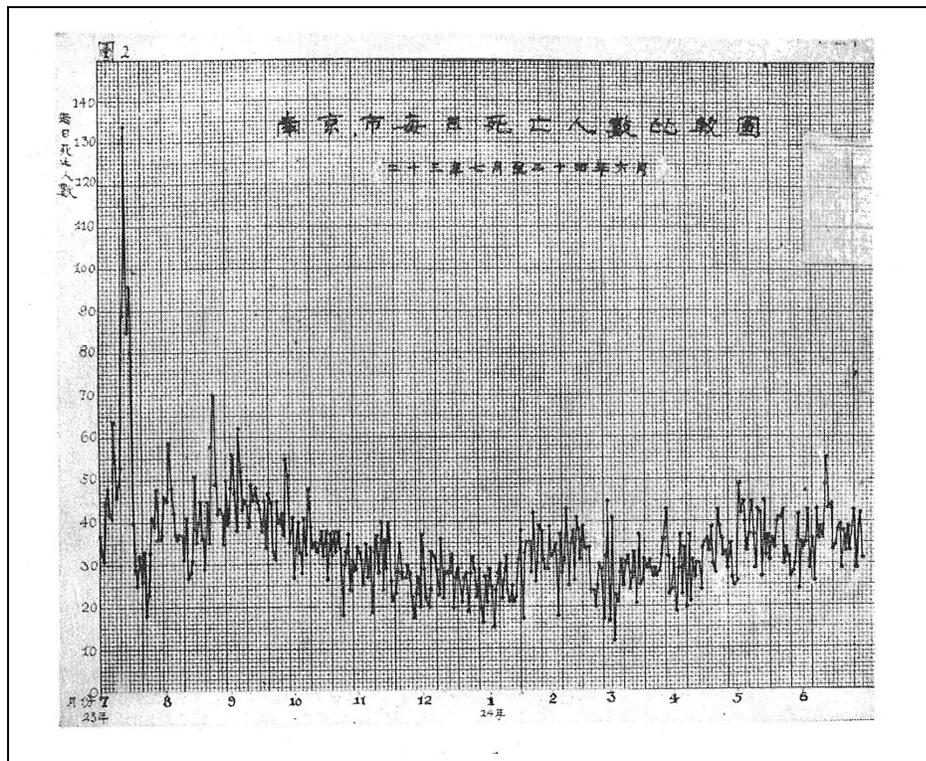


Figure 3.4: Nanjing Municipality, deaths by week, July 1934–June 1935 (Source: Nanjing shi shengming tongji lianhe banshichu, 1935: 15).

generic character of being a death. While the particular determinations of these events are certainly of interest to other parties (family members, for instance), they are completely eliminated in order to produce *pure, generic events*. The elimination of any material particularity from these events is, in fact, the very condition of their appearing as energy, just as the total elimination of time (that is, of events) is the condition of a population appearing in a census as a material substrate. One recalls that the necessary fiction involved in a census is that it represents the state of a population at a single moment: “midnight on June 30, 1953,” for instance.

In this respect, the materiality of vital events *must* be abstracted out: they pertain to the population in its wave-form, while the objects of a census must be, on the contrary, nothing but materiality.<sup>64</sup> What are recorded by vital statistics are movements or fluctuations of energy

<sup>64</sup> Incidentally, one of the most sustained articulations of this idea available at the time was a book called *On Life* (生命論 *Seimeiron/Shengming lun*, 1928) by Nagai Hisomu 永井潛 (1876–1957), one-time head of the Tokyo Imperial University Medical College—where, we recall from the previous chapter, the Director of the Central Public Health Laboratory in Shanghai, Chen Fangzhi, received his training in epidemiology (see previous chapter, p. 79)—and the eugenicist who drafted Japan's eugenic

occurring in a material substrate, the coordinated composition of which defines a natural field *as such*, and the characteristics of which can then be determined to represent a specific quantity of this energy. It is not to be wondered at, then, that the graphical representation of birth-, death-, and disease-fluctuations assumes exactly the same form as that of any depiction of energy moving through a material substrate over time. Vitality passes through, while being inextricably immanent in, its specific material—the population—just as energy passes through the ground to produce earthquakes (registered by a seismograph or seismometer), or as energy passes through water to produce waves (registered by a wavometer), or through a conductor to produce a circuit (registered by an ammeter). Thus, when the great English health reformer William Farr, the first person to adapt the actuarial techniques developed in the life assurance industry to the scale of national birth and mortality data as the basis for the construction of national life tables, refers to a life table as a “biometer,” because “it gives the exact measure of the duration of life under given circumstances,” I think we are compelled to take this description literally.<sup>65</sup>

In a suggestive metaphor, John Brownlee, another student of Karl Pearson, describes the

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sterilization and marriage laws in 1940. I will return to this text in the next chapter. Several of Nagai’s books were translated into Chinese by the Tang Erhe (see n. 42, above), the aforementioned founder of the Beijing Professional Medical College, where Xu Shijin first studied medicine. See, for instance, *Yixue yu zhexue* 醫學與哲學 (*Medicine and Philosophy*), 1926, which begins with an historical review of “Western” conceptions of life. In 1938, after the Japanese invasion of China and after Tang Erhe had become a collaborator, Nagai Hisomu came to Beijing to take over leadership of the Beijing Professional Medical College, and one of the major themes of his lectures there was how there were too many Chinese people. For more on the post-1937 part of this story, see Juliette Chung, “Struggle for National Survival: Eugenics in the Second Sino-Japanese War and Population Policies,” 2003).

<sup>65</sup> Farr, *Vital Statistics*, 1885: 492. The citation is from “On the Construction of Life Tables, illustrated by a new Life Table of the Healthy Districts of England,” published in 1859. Luo Zhiru, in *Methods of Compiling Life Tables*, translates this term as *shengmingbiao* 生命表. The *-biao* suffix is the general term for tables or charts, but it is also used as the suffix for *-meter*. The Director of the Shanghai Municipal Public Health Office (上海市衛生局 *Shanghai shi weishengju*), Hu Hongji 胡鴻基, mentioned above (n. 32), notes for instance that using vital statistics to measure the effects of public health activities is like “using a thermometer” (寒暑表 *hanshubiao*), that is, measuring the energy-effects produced by employing this or that technique: Hu, “Shengming tongji 生命統計 (Vital Statistics),” 1929: 2.

nature of vital statistical objects in the following terms:

The branches of physical science to which vital statistics are most closely allied are the theory of the molecular motion of gases and the allied problems in physical chemistry. In these sciences no attempt is made to consider any individual molecule. The number of molecules, however, in any finite unit of space at any instant is so great that it is possible to predict the phenomena expected in these sciences from the theory ... The problem in vital statistics is to find some equivalent means of estimating the average vitality of the unit comparable to the amount of energy in the molecule.<sup>66</sup>

Thus, we have a powerful set of reductions which are the very conditions of possibility of this object, vitality, appearing in its essential form, abstracted from any determinations beyond time and place. The *event* is the very form of existence of this object: it is, in a sense, “eventalness” itself, determinable only by the stripping away of any concrete substance. Figure 3.4, then, can only be a picture V: what it is a representation *of* is fluctuations in the field of vitality.

The governmental approach to the population, then, is made through a relationship to a series of events and to the conditions and regularities of their occurrence. Such representations make public health into a matter of organizing *countervailing forces* and their deployment with reference to the spatio-temporal aspects of series of events. Vital statistical representations—such as Figure 3.4, and also the dot maps (see Figure 3.5 for a published example) that were in daily use in vital statistical offices, usually filled in by hand and posted on the wall of the office, on which the locations of cases of various diseases would be marked—make visible the points of blockage, the effects of the interferences which impede the flow of vitality or which cause it to flow where it shouldn't.<sup>67</sup>

If the “force of mortality” rises in given locations at given times, or if one can follow its path through space or if it rises recursively (for instance, seasonally), this will be registered as spikes on a graph and clusters on a map. One then knows where to look for the blockage, or the

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<sup>66</sup> Brownlee, “Notes on the Biology of a Life-Table,” 1919: 38.

<sup>67</sup> Although these dot maps do not seem to have survived, we know of their use in Nanjing from a report submitted to the Public Health Office in the International Settlement in Shanghai by J.H. Jordon upon his return from a visit to Nanjing, at the invitation of the NHA. Shanghai Municipal Archives, U1–16–145 (10–15): “Report of the Commissioner of Health,” 1936.

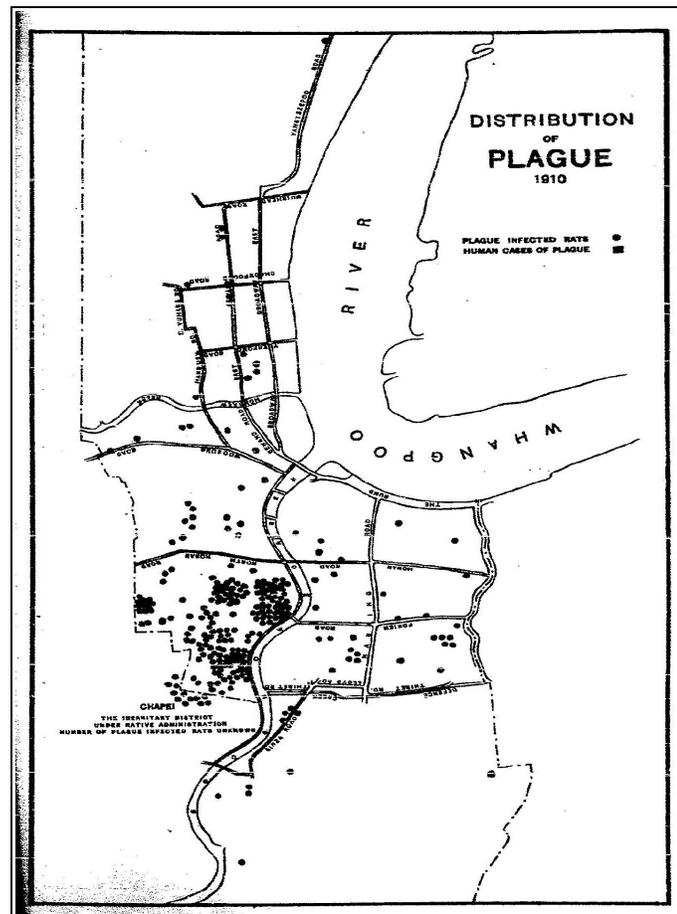


Figure 3.5: Dot map, “Distribution of Plague, 1910” (Source: *Annual Report of the Shanghai Municipal Council, 1910*).

excess, or the drain. Vital statistics are a way of tracking this flow as it is conducted by the population, and this conduction will occur more or less efficiently according to a population's conditions of existence, be they historical, cultural, social, environmental, biological, economic, or anything else. Vital statistics enable the specific, localized, and ongoing analysis of the relative importance of factors of a population's conditions of existence, so that it can be made into a more efficient conductor of vitality.<sup>68</sup>

### LIVING CAPITAL

The population is thereby constituted as the shifting material substrate of the nation's vital

<sup>68</sup> It is worth noting that this opening and closing of channels is exactly homologous to the activity of sterilizing poor and unfit populations while encouraging the better classes to have more babies.

energy, no longer what governing is *for* (as in the formulation, “governing is *for* the well-being of the population”), but the very field of operations of governing itself (“what governing governs *is* the population”). The population is the body of the energy which belongs to, indeed constitutes, “the Chinese” as a nation or a race. It is the bearer of what Zhang Shiwen 張世文 (b. 1903) calls the nation's *vital capital* (生命資本 *shengming ziben*).<sup>69</sup> As with the case of the biometer, we would do best to take this term literally.

How far does this apparent analogy between vitality and capital go? A very long way, it turns out. To make this point, I will take my examples from the banking sector of the period, which nobody will deny deals with capital in the “proper,” or at least normal, sense. If, as I am arguing, vitality *is* capital, then one should be able to govern and manage it in the same way that one governs “a” capital. This connection is not nearly as whimsical as it may appear. Certainly it can be hitched to the intellectual and practical work of particular people. Recall Chen Tianbiao, whose *Research on Population Problems* from 1930 I discussed in the previous chapter in connection with its analysis of race efficiency. In 1934, he published *The Theory and Practice of Central Banking*.<sup>70</sup> One could also cite the rather more famous Ma Yinchu 馬寅初 (1882–

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69 Zhang, *Shengming tongji fangfa* 生命統計方法 (*Methods of Vital Statistics*), 1943: 2. After receiving his initial training in sociology at Yanjing University in the 1920s, Zhang taught in a variety of sociology departments, rural reconstruction departments (鄉村建設學系 *xiangcun jianshexue xi*), and agricultural economics departments (農業經濟學系 *nongye jingjixue xi*) in the 1930s, specializing in vital registration and demography. He published studies of both the Dingxian and Hengshan experimental counties (see n. 22, above); see Zhang, *Dingxian nongcun gongye diaocha* 定縣農村工業調查 (*A Survey of Rural Industries in Ding County*), 1936 (rural industrial surveys will figure prominently in Chapter Five); and *idem.*, *Hengshan shigu xiang shehui gaikuang diaocha* 衡山師古鄉社會概況調查 (*A General Survey of Traditional Rural Society in Hengshan*), 1937, conducted through the Hunan Provincial Hengshan Rural Teachers' School (湖南省立衡山鄉村師範學 *Hunan shengli Hengshan xiangcun shifanxue*).

70 See previous chapter, p. 58, n. 20. That this apparently strange combination of interests is the product of rather more than personal scholarly idiosyncrasy—and that it may be rather the product of a supranational conjuncture—is indicated by the publication by Benoy Kumar Sarkar (1887–1949), a Bengali sociologist, political economist, and *swadeshi* activist—on whose life and work several subalternist South Asianists are working these days—of studies of banking in its relations to economic nationalism in India in 1930 (*Banken und Bankiers im heutigen Indien*) and 1934 (*Indian Currency and Reserve Bank Problems*), and then of *The Sociology of Population, with Special*

1982), whose role as one of the founders of and whose tenure as the first President of the Chinese Economics Association in 1923–24 put him in regular professional contact with virtually every major early Chinese population theorist, including Chen Changheng.<sup>71</sup> Ma is best known for the controversy which erupted around his 1957 essay, “New Population Theory” (新人口論 *Xin renkou lun*), which got him into so much trouble with Mao Zedong in the late 1950s, but his real professional expertise was the banking sector, which he saw as a crucial instrument of economic modernization.<sup>72</sup> Chang Kia-ngau (張公權 Zhang Gongquan, 1889–1979), Vice-President of the Bank of China from 1917 and General Director from 1928, was also a founding member, in 1916, of the Jiangsu Public Health Association (江蘇衛生會 *Jiangsu weisheng hui*).<sup>73</sup> Such biographical connections are interesting enough, but they can only get us so far. Far more interesting is the *formal* connection.

What exactly, for the advocates of central banking, was the problem with existing financial systems, as they had developed historically? The first problem was the scale of the networks through which capital flowed. The second was the nature and regulation of this flow: how best to establish the field of circulation of money and credit, so as to maximize overall productivity. Through the nineteenth and into the twentieth century, the development of central banking

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*Reference to Optimum, Standard of Living, and Progress* in 1936.

71 Ma was asked in 1922 to take up the leadership of the association by Liu Dajun (see Chapter One, p. 9, n. 15 on the relevant connections here); Zhongguo jingjixue she, *Zhongguo jingji wenti* 中國經濟問題 (*Economic Problems in China*) 1929: 353–357.

72 There is nothing *actually* new in the theory. The essay was first published in *People's Daily* (人民日報 *Renmin ribao*) on July 15, 1957. As part of his rehabilitation in the immediate post-Mao period, which played an important role in the reinscription of demography into practices and strategies of governing in that period, the essay was republished in 1979. See Ma, *Xin renkou lun* 新人口論 (*New Population Theory*), 1979. He had been occasionally writing about population issues since his return to China from studying at Columbia University in 1920.

73 On Chang, see Wen-hsin Yeh, “Corporate Space, Communal Time: Everyday Life in Shanghai's Bank of China,” 1995: 103–105, Ji Zhaojin, *A History of Modern Shanghai Banking: The Rise and Decline of China's Finance Capitalism*, 2003: 101–102 *et passim*; Marie-Claire Bergère, “The Shanghai Bankers' Association, 1915–1927,” 1992; and for rather more information than anyone could possibly need, Yao Songling, *Zhang Gongquan xiansheng nianpu chugao* 張公權先生年譜初稿 (*Draft Biographical Chronology of Mr. Zhang Gongquan*), 1982.

systems addressed the essential task of forming a national-scale financial space.<sup>74</sup> A variety of means were developed to accomplish this, and they were arranged in various configurations in different countries according to their different circumstances, but a basic set of functions can be described.

1. Unification and organization of the money system (note issue, ensuring convertibility, etc.)
2. Centralization of national reserves (serving as a “bankers' bank”)
3. Improvement and unification of the national payments and transfer system
4. Management of money supply and credit crises
5. Stabilization and regulation of the monetary system (bailing out financial institutions, supplying or withdrawing money from circulation according to current needs)
6. Statutory supervision of other banks (setting minimum reserve, balance, and deposit insurance requirements, etc.)
7. Provision of financial services to the national government
8. Equalization of interest rates over a whole national territory<sup>75</sup>

This division of functions enabled central banks to play a crucial role in the centralization and accumulation through which national capitalist economies were generated, and in the elimination (or at least tendential optimization to a national scale) of the historical unevenness

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74 The dates of establishment of a few central banks will suffice to locate this phenomenon in time and space: the National Bank of Belgium (which was used as the model for the Bank of Japan, established in 1882) was founded in 1850; the State Bank of the Russian Empire in 1860; the Reichsbank in Germany in 1875; the Banco d'Italia in 1893; the Swiss National Bank in 1905; the US Federal Reserve in 1913; Mexico in 1925; Turkey in 1932; and Argentina in 1935. By necessity, a whole complex history is occluded here. The history of central banking itself is relatively understudied, but one may start with National Monetary Commission, *Banking in Russia, Austro-Hungary, The Netherlands and Japan*, 1911; Wm. A. Shaw, *The Theory and Principles of Central Banking*, 1930; J.S.G. Wilson, “The Rise of Central Banking in India,” 1952; Richard H. Timberlake, Jr., *The Origins of Central Banking in the United States*, 1978; Charles Goodhart, *The Evolution of Central Banks*, 1988; Carlos Marichal and Daniel Díaz Fuentes, “The Emergence of Central Banks in Latin America: Are Evolutionary Models Applicable?”, 1999; and John H. Wood, *A History of Central Banking in Great Britain and the United States*, 2005.

75 Since interest rates represent the price of money when all knowable risk factors have been accounted for, this last item presupposes the opening up and equal accessibility to knowledge of a national territory—the creation of a “single probabilistic urn,” in Alain Desrosières' suggestive phrase (see *The Politics of Large Numbers: A History of Statistical Reasoning*, 1995: 25)—and at least theoretical equal mobility of capital in all directions across a national economic space, however this might be achieved.

of the distribution of capital. Their activities comprised what Lenin, in *Imperialism: The Highest Stage of Capitalism*, described as “the rapid expansion of a close network of canals which cover the whole country, centralizing all capital and all revenues, transforming thousands and thousands of scattered economic enterprises into a single national capitalist, and then into a world capitalist economy.”<sup>76</sup> This characterization should not be misunderstood as the product of a radical leftist critique: advocates of central banking said exactly the same thing. According to Otto Jeidels (1882–1947), a prominent contemporary observer, “the big banks ... are striving to eliminate the unevenness in the distribution of capital among localities and branches of industry resulting from the historical development of individual enterprises.”<sup>77</sup> And according to Marquis Katsura Tarō 桂太郎 (1848–1913), Prime Minister and Minister of Finance of Japan in 1911:

By establishing a Central Bank, it was expected that the evils of the financial system in vogue, which might be termed the feudal system, would be obviated, and it was also hoped that by converting the national banks into agencies or branches of the central banking institution, having a complete system of communication, an even operation would be attained, and the working of the entire machinery facilitated throughout the whole Empire.<sup>78</sup>

By taking up and economizing key functions within the financial sphere, centralizing resources and creating a unified regulatory space, central banks would “unblock” economic formations at a national scale, to adjust them to their new conditions of existence. They would remove the blockages and obstacles to the flow of capital which had resulted from its “haphazard” historical development (which really means their development with reference to *different*, smaller scales), from its inscription into sub-national (“feudal”) or super-national (“imperial”) scales. They would create the conditions for the smooth and unobstructed flow of capital across a nationally-defined space (which would certainly be linked to the international economy, but through the

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<sup>76</sup> Lenin, *Imperialism: The Highest Stage of Capitalism*, 1965 (1916): 35.

<sup>77</sup> Jeidels, *Das Verhältnis der deutschen Grossbanken zur Industrie mit besonderer Berücksichtigung der Eisenindustrie*, 1905, cited in Lenin, *Imperialism*, 1965: 48.

<sup>78</sup> Cited in National Monetary Commission, *Banking in Russia, Austro-Hungary, The Netherlands and Japan*, 1911: 121.

intermediation of the central, political apparatus of control).<sup>79</sup> This did not just mean opening up peripheral areas to penetration by core enterprises or projects, but also the effective capitalization of peripheral economic resources, ensuring that resources which had theretofore lain outside the field controlled by the imperative of national-capitalist development were made available to that project. That is, were not “wasted.”

This task presented economic nationalists in colonial and semicolonial countries with a particular set of difficulties, given that flows of capital into and out of them had been designed to operate precisely at a *non*-national level.<sup>80</sup> Schematically speaking, and simply for purposes of illustration: these structured flows were organized at a super-national level in the case of colonial India, where British-organized economic development sought to inscribe India's resources into a scale of economic organization which corresponded to the British Empire (though there was no lack of a critique of feudalism in India), and at a sub-national level in semi-colonial China, where the collapse of effective central control opened China's resources to a multitude of agents acting at a variety of scales (although, again, anti-imperialism was a central aspect of nationalist politics in China). The recovery of these resources to something like a national scale was the key and defining felt need of economic nationalism as such, as a global project.

How, then, was it to be accomplished? Chen Tianbiao begins his discussion of the operations of a central bank with exactly the same schematic division into static and dynamic aspects that we have explored above with regard to the population. For the static aspects, Chen lists:

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<sup>79</sup> For an excellent study of the efforts of Indian nationalists to fashion India as a national-economic territory rather than a functionally-subordinated colonial economy, see again, Manu Goswami, *Producing India*, 2004.

<sup>80</sup> Note that this was exactly the problem that Mathew Carey and Friedrich List felt themselves to be addressing, in virtue of the United States' and Germany's putative functional subordination to Britain (see Chapter One, p. 38, n. 83).

- A. Centralization of bank reserves (銀行準備集中 *yinhang zhunbei jizhong*)
- B. Exclusive right to issue money (發行特權 *faxing tequan*)
- C. Assembly of remittances (匯劃總會 *huihua zonghui*)
- D. Management of the Treasury (經理國庫 *jingli guofu*)
- E. Control of foreign exchange (管理外匯 *guanli waihui*)

For the dynamic aspects:

- A. Discount policy (貼現政策 *tiexian zhengce*)
- B. Utilization of public markets (公開市場之運用 *gongkai shichang zhi yunyong*)<sup>81</sup>

The function of a central bank, for Chen, is precisely to register and regulate *the flow of capital* (energy) *through an economic formation* (material substrate): to ensure that this flow can move where it should; that it is not obstructed where it should not be; that it is channeled in certain directions and blocked from flowing in others; that the “accidental” or “historical” structures of an economic formation—the conditions of its existence that the drive to rationalization encounters as a series of givens—do not stifle the flow of capital through it. This regulation is achieved by the recursive coordination of an economy's states and dynamics, by finding the levers and points of intervention which will enable this “tuning” (調節 *tiaojie*) or “setting of right proportions” (調劑 *tiaoji*) to occur.<sup>82</sup>

Chen's dynamic aspects entail a very particular relationship between a central bank and money markets:

By “utilization of public markets,” I mean the buying and selling of stocks and bonds by the central bank. The bank rate can be made more effective by controlling the hub (輪轂 *lungu*) of the growth or decline of investors' deposits in the market. If there is too much mobile capital (游資 *youzi*), it must be reduced. So naturally the discount rate will come down. (Whether the rates of the private banks, being freer than the central bank, will fall to match the official discount rate, is difficult to control.) When it is desired that the

81 Chen, *Zhongyang yinhang zhi lilun yu shiwu*, 1934: 2.

82 *Ibid.*, 3; Ma Yinchu, *Zhongguo jingji gaizao* 中國經濟改造 (*Reform of the Chinese Economy*), 1935: 252–253. The latter term especially was originally a medical term referring to the mixing of prescriptions. I will return to these terms again in Chapter Five.

discount rate be raised, one can sell stocks and bonds and thereby absorb the deposits in the market. Feeling the shortfall in deposits, private banks will have no option but to gravitate towards the central bank's requested discount rate for short-term loans. If the discount rates on the market are too high, and it is desired that they be lowered, then one may *buy* stocks and bonds. The more you buy, the more cash is flowing in the market, and the market discount rate will necessarily fall.<sup>83</sup>

Governing a national economy, then, is essentially a matter of distributing energy felicitously. In his discussion of how to channel the floating capital (*youzi*, again) on Shanghai's money market and “foreign surplus capital” (外國餘資 *waiguo yuzi*) into China's interior in order to revitalize the rural economy, Ma Yinchu says exactly this:

If a country wishes to be able to defend itself against foreign aggression in the long term, it must store its wealth with the people (藏富於民 *cangfu yu min*).<sup>84</sup> If we wish to do this, in our current situation, we must make urban money-capital (資金 *zijin*), and especially Shanghai money-capital, flow into the interior. Shanghai's money-capital today is excessively swollen. It is blocked up and cannot circulate, and there is no channel of release. In this respect, it resembles a person suffering from an ascitic disease (膨脹病 *pengzhangbing*, lit. “bloating disease”).<sup>85</sup> Money-capital in the interior, on the other hand, has dried up completely, and there seems to be no way of refreshing it. As a result, the people's livelihood is hardened and destitute. This has reached an extreme point, and it is like a person suffering from anemia (貧血病 *pinxuebing*, lit. “deficient-blood disease”). How then shall we remove the obstructions for the ascitic? How shall we replenish the blood of the anemic? Both are urgently in need of medical treatment.<sup>86</sup>

Money-capital, here, is figured as a *vital agent*, indeed, as vitality itself. Too much of it *vis-à-vis* its material substrate, that is, per unit of productive capacity, produces painful swelling and agitation. Too little produces an insensitive stupor. Just as heat is produced by an increase in the

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83 Chen, *Zhongyang yinhang zhi lilun yu shiwu*, 1934: 4.

84 Anyone familiar with the long history of imperial political and economic thought will immediately recognize this phrase as a basic and venerable trope of “Confucian” governmental thought, specifically that aspect of it that emphasizes a relatively non-extractive role of the state in relation to general processes of production and circulation. Its inclusion here does not, to my mind, suffice to inscribe Ma's comments in that tradition, except in a superficial way. Certain limited lexical continuities, while they can and have been the subject of very interesting studies, should not obscure yawning structural discontinuities.

85 This term, 膨脹 *pengzhang*, is also used for “inflation” in the economic sense. That is, a surplus of money in relation to produced goods leads to a devaluation of the unit-value of money, leading to a rise in prices. Here, the rise in prices would be seen as a release of pressure, a return to a proper proportion between energy and matter.

86 Ma, *Zhongguo jingji gaizao*, 1935: 418.

ratio of energy to material substrate (and thus we speak of a market as “overheated”), while a decrease in this ratio produces cold (or a “cool” market). The haphazard historical development of China's economic system has resulted in a situation where capital and factors of production are not connected in an efficient manner, just as the haphazard historical development of the population means that vitality and the population are not connected in an efficient manner.

It might be said, of course, that these are just metaphors, but what makes these metaphors possible is that both terms participate in a common schematization. Indeed, no “literal” description can be provided that would differ in form from the “merely” metaphorical one. A population-pyramid graph and a vital statistical graph of deaths exist in precisely the same relationship to each other as do a balance sheet and a statement of income and expense, because the objects they produce and then represent are formally identical. It is no mere metaphor, indeed, when Chen Changheng describes vital statistics as “a nation's vital bookkeeping” (一個國家的生命帳簿 *yige guojia de shengming zhangbu*).<sup>87</sup> They really are that.

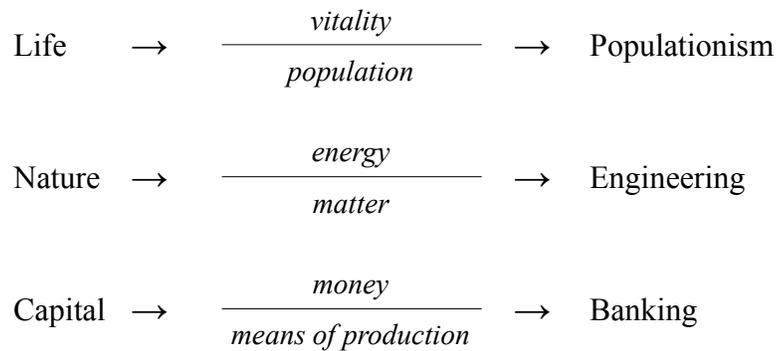
We should not imagine, then, that banking in this system is in any sense “superstructural,” that is it supplementary to “real productive activity,” or that it does not play a directly productive role as one of the key sites in which mere wealth is turned into capital proper. It surely does, just as in Foucault's analysis of power relations, power is not such that one could remove it and leave everything else just as it had been. Our everyday image of a central bank is of a regulatory agency standing above financial markets, approaching them from the outside, so to speak. But the actual operations of a central banking system involve being inscribed into financial markets at every moment: not commandeering an already existent reality, but being permanently stationed and operating at key points within the economic formation to which it refers, at the “hubs,” as Chen says, at those very points at which the realities of the financial

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<sup>87</sup> Chen, “Shengming tongji,” 1937: 328.

markets emerge, so that their emergence is fortuitous. Precisely the same thing is true of the population management system whose epistemological lever is vital statistics, whose object is the utility of life, and whose goal is to adjust or tune the conditions of life such that they best enable vitality to flow.

I suggested earlier that life, divided into vitality and population, and nature, divided into energy and matter, were constituted homologously as transcendental in the nineteenth century. Through the development of demography and public health in the late nineteenth and early twentieth centuries in a variety of places, but most importantly for my purposes in Germany and the United States, this was then encoded into the governmental technologies whose installation in China we have been tracking. I can now add a third term to this series: capital, divided into value and means of production. The relations established between the terms of the three series are strictly isomorphic:



V = \$, OR: POPULATIONISM AND CAPITALISM

Vitality thus appears as the pure energy-aspect of life, stripped of its accidental, material, or historical determinations and revealed as that *capacity to work as such* which, for the first time under capitalism, becomes a commodity that is bought and sold, whose management becomes a matter of central economic importance, and whose peculiarity lies in being both immaterial and inseparable from its bearer, the labourer, whose management is thus required simply by the form

in which she or he appears *vis-à-vis* capitalist knowledge. The relation of biopolitics to capitalism, which is, after all, the central issue here, has also been explored by the Italian Marxist Paulo Virno. It is worth citing his comments at some length:

The paradoxical characteristics of labor-power (something unreal which is, however, bought and sold as any other commodity) are the *premise* of biopolitics [my emphasis] ... In the *Grundrisse*, Marx writes that “the use value which the worker has to offer to the capitalist, which he has to offer to others in general, is not materialized in a product, does not exist apart from him at all, thus exists not really, but only in *potentiality*, as his *capacity*” [Virno's italics]. Here is the crucial point: where something which exists only as a possibility is sold, this something is not separable from the living person of the seller. The living body of the worker is the substratum of that labor-power which, in itself, has no independent existence. “Life,” pure and simple *bios*, acquires a specific importance in as much as it is the tabernacle of *dynamis*, of mere potential. Capitalists are interested in the life of the worker, in the body of the worker, only for an indirect reason: this life, this body, are what contains the faculty, the potential, the *dynamis*. The living body becomes an object to be governed not for its intrinsic value, but because it is the substratum of what really matters: labor-power as the aggregate of the most diverse human faculties (the potential for speaking, for thinking, for remembering, for acting, etc.).<sup>88</sup>

The vitality that I have been investigating here, and which Irving Fisher described in 1909 as “human labor capitalized,”<sup>89</sup> is then nothing other than a figure of labour-power. That is, *how an essentially capitalist object appears to and can be taken up by science*. What is here called the biopoliticization of China simply describes the conversion of the biological life of the people into a form of capital, just as when any area is incorporated into the capitalist world-economy, whenever and however that occurs, its elements are capitalized. That is, stamped with their formal determination as capital, while their material attributes do not necessarily change one

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88 Virno, *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life*, 2004: 82–83.

This is not quite exact, it must be said, but it gets us into the right area. Labour-power is indeed what is bought and sold on the labour market, but what is actually received and then expended in production (and which thereby produces commodities)—labour (not labour-power), kinetic energy (not potential energy), *Kraft*—is, according to Leibniz, who, in identifying *vis viva* also specified its peculiar mode of existence, “midway between the faculty of acting and the action itself; it includes effort and thus passes into operation by itself, without any auxiliary, but with only the removal of impediments” (Leibniz, *De Primae Philosophiae Emendatione et de Notione Substantiae*, 1694, cited in Jammer, *Concepts of Force*, 1962: 160). The identification and formalization of this new thing, “midway between” faculty and action, is exactly the conceptual ground on which dynamics is erected. Thus, labour-power—a potentiality deriving from a particular material arrangement—is absolutely being managed, but it is “of interest” in virtue of its immanent relationship to labour itself.

89 Fisher, *National Vitality, Its Wastes and Conservation*, 1909: 739.

iota. Something's being capital in the first place, after all, is entirely a matter of forms and relationships, not of substances and properties.

The problem of population, then, is inextricably bound up with the implantation of that new regime of comparability by which a social formation is made practically relatable to the capitalist world-economy. This ahistorical matrix is distributed into a social formation in an entirely historical way precisely through the development of techniques like the one's described above. It is not a question of a new, “foreign,” epistemology gradually and inexorably taking over an old “indigenous” one, but of the generation of a new set of objects for governing by the distribution of technically-oriented practices. The Chinese population comes to exist in that state of formal identity but substantial difference which alone enables the coordination and management of value-creating activities within the capitalist world-episteme. This occurs just as the category value (which, like life, is not such as can be presented to experience, but can only be represented in terms of a general equivalent) stamps formal identity upon crude material objects (the infinity of use-values, which is not at all the same concept as the “utility” of the marginalists) with all of their substantial particularities.

Thus,  $V = \$$ , but not money as means of exchange, and not money as store of value (the “cash on hand” one finds on a balance sheet, for instance), but money as representation of value, as the abstract means by which dissimilar material particulars can be related to each other, which also designates their *force* or their *virtue*, in the classical sense of that term. Vital processes can be accounted for “in terms of” V just as a capital flow—the changing composition of a given capital comprised of dissimilar particulars—is represented on an income and expense report as the addition and subtraction of units of money. The precondition upon which capitalist incorporation depends—the act the accomplishment of which means the deal is done, so to speak—is this forcing of a matrix of formal identity and interchangeability into a field of

dissimilar objects. This matrix is precisely the schematization according to static aspects (matter—population—means of production) and dynamic aspects (energy—vitality—capital).

The true explanatory nexus for populationism in Republican China, then, is not, or is only collaterally, the nation and its modernity, but much more importantly, the incorporation of this region into the capitalist world-episteme and -economy, the creation of the formal comparability upon which logically or temporally subsequent “real” capitalist subsumption depends.<sup>90</sup> Clearly this notion of life—which I will take up again in the next chapter at a different level—is *the* biopolitical category, but what biopolitics ultimately refers to, I think, is not *politics* in the sense assigned to nations, states, peoples, citizens, and so on, but the organization of the capitalist field, of the objects and relations which comprise the capitalist social formation. What biopolitical technologies effect is not just the organization of a political inside and outside (which is the grid into which consciously or unconsciously liberal interpretations of Foucault try to squeeze them), but even more so the ongoing calibration of life and government to the requirements of capitalist production, broadly conceived. Bourgeois or economic nationalism takes up this problem of the economy at a second order: that of the relationship of ownership which can be maintained (or not) in regard to this field. Once life is capital, it could be anybody's capital, and bourgeois anti-imperialism necessarily assumes a “protectionist” form: it becomes a matter of making it “our” capital. Bourgeois nationalism and concern for the life of the people takes the form it does on the basis of the *prior* formal reorganization of the social field which has been our object in this chapter, and whose history is immanently related to the form of vital statistical knowledge.

I can now clarify the profound difference between this form of knowledge about the

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<sup>90</sup> The *locus classicus* for this distinction between formal and real subsumption is the notoriously difficult “The Results of the Direct Production Process,” written by Marx in 1864, and included as an Appendix to the Penguin edition of *Capital*, 1990. It can also be found in Marx and Engels, *Collected Works, Vol. 34: Economic Works, 1861–1864*, 1994.

population and that which obtained in the late imperial period. This notion of the population is completely without analogue or precedent in China. To be sure, there existed prior to the twentieth century the notion of a variable quantity of people, or the sum of a number of units (taxable, conscriptable, supportable, and so on) in reference to which governmental measures could be calibrated, and the sum of which is subject to various conditions.<sup>91</sup> There existed, too, a rather rough correlate to the notion of vital energy or “life” (氣 *qi* or 精 *jing*), but such rough correlations serve more to obscure than to illuminate historical transformations. These two things existed in completely different discursive domains, and maintained no immanent relationship to each other. The population-as-number was a sum of individualities, not the collective bearer of a “common life”—it was nothing like a species. And 精 *jing* was a function of an individual body and its relationships to its environment and its own practices, or rather of how practices of self-care could channel and shape an omnipresent force (氣 *qi*) into a given life. In any case, it was not a property of a biological collective. If this new biopolitical object had emerged from “within” some kind of indigenous Chinese field—it didn’t—one could imagine that it arose from a kind of conjoining of these two elements. But in fact, it came from “within” quite a different field, into which China was inscribed, at certain moments, by means of the transposition of lexical elements from one field to another.

Vital statistics constitute an analytic of government organized around generic energy-events. Late imperial Chinese systems of population registration, by contrast, contained no

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<sup>91</sup> Recalling my earlier comments on the use of genealogies in the production of life-tables, I think we must say the same thing about the Yellow Registers in which the “population” was recorded. However useful these sources can be in the reconstruction of historical-demographic processes, they are not themselves “population registers” but registers of resources available to the state in whatever form. By the Qing, at any rate, what was recorded in them was not just people (and in any case, not all people were recorded, even in principle), but silver and grain stocks, official postings, transport infrastructure, horses, weapons, salt, tea, assorted valuables, and so on. Anything, it seems, that was not land, for which the Fish-Scale Registers were used. See again, *Qing neige jiucang hanwen huangce lianhe mulu* 清內閣舊藏漢文黃冊聯合目錄 (*Union Catalogue of Surviving Chinese-language Yellow Registers of the Qing Grand Secretariat*), 1947 (see p. 101, n. 8, above).

reference at all to events. These systems existed so that the number of people could be entered as a factor into the calculations through which governing organized itself at a variety of levels. It is not even possible to call these enumerations “states” of a population (though they can become that retroactively), since this term only has meaning in relation to dynamics. Late imperial Chinese taxation and subsistence projects, then, were concerned with the extraction and redistribution of a certain portion of the total produce of the empire's subjects, the counting of the people being related to the calculations by which this extraction was determined. In the twentieth century, the point of intervention was no longer just the population's products but, increasingly, its *productive capacity*. In the late imperial framework, people were approached as producers, but not in terms of their productivity itself. For late imperial statecraft, the number of people was a kind of datum, a referent, *out of* which it was possible to extract a certain amount of stuff (taxes), and *into* which it was possible to send back a certain amount of other stuff (subsistence). It was never constituted as the epiphenomenon of a thick natural field *within* which it was possible, indeed necessary, to operate, such as it became in the twentieth century. For this to happen, two basic changes had to occur, which will form the topics of the next two chapters. First, the population, on account of the structure given to it by the technologies described in this chapter, now has depth in addition to breadth, and it is this depth that public health will seek to organize (Chapter Four). Second, this depth is conceived not just in terms of its relations to its own *products*, but also in terms of its *productivity*, its capacity to produce (Chapter Five).

**THE VIRTUAL OBJECT OF PUBLIC HEALTH,  
OR: THE PROBLEM OF LIFE**

PUBLIC HEALTH AS AN APPARATUS

The object here is neither a history of ideas in China, nor a social history, nor the history of a discourse, but the history of the formation of a particular field of governability defined by a population. Thus, the description involves a variety of topics that have been made the objects of extensive, and sometimes vast, scholarly literatures in their own right, but whose “internal” logics and transformations cannot be definitive for present purposes. Public health in China is one of these topics, about which a good deal of scholarship has been and continues to be produced, and we are now in possession of a good deal of the facts of this history.<sup>1</sup> While I draw on this literature, and hope that my argument here will be of interest to scholars working in this area, this chapter is not, strictly speaking, a contribution to it. I will be concerned in this chapter

1 The first histories of public health in China were produced by central figures in its early twentieth-century development. See, for instance, Wang Chi-min and Wu Lien-teh's *The History of Chinese Medicine, Being a Chronicle of Medical Happenings in China from Ancient Times to the Present Period*, 1932, and Chen Bangxian 陳邦賢's *Zhongguo yixue shi* 中國醫學史 (*The History of Chinese Medicine*, 1937). The problematic of the Westernization or modernization of Chinese medicine is covered in works like John Z. Bowers, *Western Medicine in a Chinese Palace: Peking Union Medical College, 1914–1951*, 1972; Mary Brown Bullock, *An American Transplant: The Rockefeller Foundation and Peking Union Medical College*, 1980, and *idem.*, *The Oil Prince's Legacy: Rockefeller Philanthropy in China*, 2011; G.K. Choa, “Heal the Sick” was Their Motto: *The Protestant Medical Missionaries in China*, 1990; and Mary E. Ferguson, *China Medical Board and Peking Union Medical College: A Chronicle of Fruitful Collaboration, 1914–1951*, 1970. For the “politics” of public health, see, e.g., Carl F. Nathan, *Plague Prevention and Politics in Manchuria, 1910–1931*, 1967; Yip Ka-che, *Health and National Reconstruction in Nationalist China: The Development of Modern Health Services, 1928–1937*, 1995; and Sean Hsiang-lin Lei, “When Chinese Medicine Encountered the State: 1910–1949,” 1999. Some of the key recent works with regard to China in an East Asian or global context are Judith Farquhar and Marta Hanson, eds., *Empire of Hygiene* (a special issue of *positions: east asia cultures critique*), 1998; Ruth Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China*, 2004; Larissa Heinrich, *The Afterlife of Images: Translating the Pathological Body between China and the West*, 2008; Yip Ka-che, ed., *Disease, Colonialism, and the State: Malaria in Modern East Asian History*, 2009; and Angela Ki Che Leung and Charlotte Furth, eds., *Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century*, 2010.

not in the politics of public health (how it is distributed or resisted, or how it serves certain political interests while militating against others, or again, how it is deployed within a context of unequal political and social relations at a variety of possible scales), nor in the question of public health's proper domain or conditions of legitimacy (such as one finds in critiques of eugenics as a “pseudo-science” or in studies of “alternate modernities” and the variety of ways in which long and elaborate traditions of medicine, where these existed, are or are not harmonized with it). Nor again, except incidentally, will I treat the processes and dynamics of its global spread (the history of global medicine) or its progressive scientization or systematization (the history of medicine as traditionally conceived). All of these aspects of public health have been the subject of excellent and valuable studies, which I draw on heavily. But here I will focus on the form of the field of governability that it brings into existence. The central problematic here is not an encounter between one tradition and another, but the positive organization of governmental practices by technologies of knowledge.

It is easy enough to imagine how public health might have something indirectly to do with the formation and distribution of a capitalist social logic. After all, there is no shortage of commentaries from people engaged in public health work about the benefits to a national economy to be derived from higher levels of collective health.<sup>2</sup> But to the extent that public health is essentially concerned with and structured by the population—a claim that it will be the task of this chapter to substantiate—we might venture the claim that public health is constituted *according to* a capitalist social logic, that the basic structure of both its particular knowledge and its institutional arrangement *presupposes* the capitalization of the elements of a social formation, first among which is the population,<sup>3</sup> regardless of the intentions or motivations of awarenesses

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2 This last notion—collective health—is itself an extremely curious notion that we would do well not to skate over. I will return to it below.

3 This is not to suggest that we should or could get rid of it, and certainly not in the name of a return to precapitalist medicines. Nuclear power is as much a product of the technological formation of capitalist society, and nothing but disaster would result from a return to a pre-nuclear state of

of its practitioners, and regardless of whether they were or felt themselves to be engaged in the explicit debates over the population problem. (Some were, some were not.) If, as I argued in Chapter Two, a population appears as a skein stretched between nature and society, this does not mean that it is a *single* line that can be drawn clear across an entire socio-natural system. It is, rather, a line that structures a field of governability that can be drawn at a number of spatial or temporal scales. What will define public health in this chapter is neither a knowledge nor a set of institutions, but, as we will see, a form of activity. My central concern will be the role that “the protection of Chinese life” played in the general reorganization of practices of governing in China in the early twentieth century. But this approach must be distinguished from two other approaches, first *vis-à-vis* China, and second *vis-à-vis* the concept, or rather the pseudo-concept, of life.

The basic received story of the politics and geopolitics of public health in China goes something like this: In its efforts to fend off encroachments on its sovereignty China more or less successfully adopted the latest public health techniques and thus retained or eventually recovered that sovereignty. One of the conditions for the return of Tianjin to Chinese control in 1902, for instance, was the formation of a municipal police force with sanitary functions and powers.<sup>4</sup> One of the reasons neither Japan nor Russia asserted more control than they did during the outbreak of pneumonic (pulmonary) plague in Manchuria in 1911 was that they were reasonably assured by the establishment of the North Manchurian Plague Prevention Service (東三省防疫事務總管理處 *Dongsansheng fangyi shiwu zong guanlichu*) that their interests would not suffer by Chinese neglect in this area.<sup>5</sup> And one of the conditions for the transfer of port

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knowledge. What's done is done.

4 On this, see Benedict, *Bubonic Plague in Nineteenth-Century China*, especially chapter 6: “Plague and the Origins of Chinese State Medicine in the New Policies Reform Era, 1901–1911” (150–164).

5 See Wang and Wu, *The History of Chinese Medicine*, 1932; Nathan, *Plague Prevention and Politics in Manchuria, 1910–1931*, 1967.

authority from various concessionary governments and the China Maritime Customs to the Nationalist government in 1930 was the establishment of the National Quarantine Service (全國海港檢疫管理處 *Quanguo haigang jianyi guanlichu*), vetted by Western experts as satisfactory and up to date.<sup>6</sup> Changes are made, measures are enacted, sovereignty is retained or recovered, and everyone who thinks that's important breathes a collective sigh of relief. Or, the habits and norms of public health are installed at a cultural level under the sign of “modernity,” and they act as operators of modernization and sites from which municipal and/or provincial elites can organize their interests and secure their social position.<sup>7</sup>

But what actually happens here? In either approach, the real practice of public health is subordinated to its instrumentalization with regard to a given set of subjective (usually elite and anti-imperialist) motives. It is as though public health either accomplishes what a subject who wields it wants it to, or it has no effect. But I think we can identify in the practices of public health a series of motives that operate at the level of the techniques themselves, that do something regardless of or in addition to whether they contribute to the success or failure of a given, stated, political project. Instead of the geopolitics or cultural politics of public health, then, I want to look at public health as a real distribution of techniques: as a technical and scientific field rather than a political and cultural field. Once the subjective or instrumental lid is pried off public health to reveal its instrumentation and techniques, a whole scientific field is revealed which, while being completely apolitical and acultural, nonetheless has profound ramifications for the organization of power and production in Republican China.<sup>8</sup> That's the first

6 Yip, *Health and National Reconstruction in Nationalist China*, 1995.

7 This is the problem by which an historical concern for public health is conjoined to one of the major problems in contemporary Chinese historiography, which is the function of elite networks in organizing and managing the transition to modernity. For a particularly good study along these lines, see Ruth Rogaski, *Hygienic Modernity*, 2004.

8 To clarify what I mean by this: it is apolitical in the sense that it does not proceed or organize itself in terms of any political categories (and where they are involved, it is as means and variables rather than as categories), and it is acultural in the sense that, first, cultural forms are means through and by which it can accomplish its work, and second, it pertains to those aspects of a population that are

demarcation.

The second demarcation is from those approaches which start from an implicit or explicit determination of what life is, and this for the same reason that I have bracketed throughout this dissertation the question of what a population is. We can accept, though, as a kind of provisional hypothesis, that the object of public health is the collective life of the population in its relations to its conditions of existence, or, more simply, collective life. Can we, then, determine the boundaries of the problem of life if we know what life is? No, and here I want to mark a certain distance from those approaches to the history of biopolitics that think that we can say something important about the historical distribution of those practices of governing by determining what life “really” is, as though the dynamics of the problematization could be explained by referring them to the nature of the preexistent thing that it is the problematization *of*. But do we (or, more importantly, they) know what life is, in any more interesting way than “we know it when we see it”? Or do we not rather skip over this step, not because it is methodologically legitimate to do so or because it's not important, but because an answer that's “good enough” is given to us within whichever practices of managing life in which we may be engaged?

It is not enough, for several reasons, to say that China “discovered” life—or perhaps a new understanding of it, which would involve us in not inconsiderable problems of translation and commensurabilization—and then incorporated it into new practices and systems of governing. First: If life is (as it manifestly seems to be, and which it seems absurd to even question) something that transcends any particular organization of knowledge (how could there be knowledge without it?), why should it have been discovered for practices of governing only when it was, in the eighteenth century in Europe, and in the early twentieth century in China and in many other places?<sup>9</sup> Second, and more importantly, if we look closely at definitions of life in universal.

9 Its discovery remains a historical problem even if we accept (which we need not) that knowledge reveals preexistent realities or “things.”

any particular period, but especially in *this* period, we discover a major problem: Which concept of life exactly can people be said to have discovered? It makes little sense to claim that there is some recognition or discovery of a life that would be the ground or “common discovery” of the series of incommensurable attempts to attach a concept to a word. If no concept corresponds to it, what then can be said to have been discovered? In what would its discovery consist, if not in the formation of a concept?

I will limit myself here to the technical or scientific attempts to define life produced during a relatively limited span of time: roughly, the mid-nineteenth century to the mid-twentieth century. That is, I leave to one side—not because it isn't important, but because it would take me too far afield of the concerns of the present chapter—the “poetics” or cultural politics of life that took on such massive dimensions in exactly this period. Once a concern for the protection and cultivation of life is installed into the everyday cultural grain of a social formation, there seems to be no limit to the places it can turn up or to the things that can be said about it. Hence the need for the present limitation. But even doing so, we can easily find a number of definitions, and in doing so we begin to detect the problem. For the prominent Victorian philosopher, positivist, and advocate of Darwinism George Henry Lewes (1817–1878), life is “a series of definite and successive changes, both of structure and composition, which take place within an individual without destroying its identity.”<sup>10</sup> For Herbert Spencer (1820–1903), it is “the coordination of action,” or “the definite combination of heterogeneous changes, both simultaneous and successive, in correspondence with external co-existences and sequences.”<sup>11</sup> It is also, according to the physiologist William S. Savory (1826–1895), “essentially a state of dynamical equilibrium, consisting fundamentally and universally in ... a regulated adjustment between waste and repair.”<sup>12</sup> Hans Driesch (1867–1941), resuscitating Aristotle's notion of

<sup>10</sup> Lewes, *Comte's Philosophy of the Sciences*, 1853.

<sup>11</sup> Spencer, *The Principles of Biology, Vol. I*, 1896 (orig. 1886): 60–61.

<sup>12</sup> Savory, *On Life and Death*, 1863.

entelechy, defines life as a purposive and organizational field.<sup>13</sup> Or, for the comparative physiologist Edward D. Cope (1840–1897), it is “energy directed by sensibility, or by a mechanism which has originated under the direction of sensibility.”<sup>14</sup> Bichat's (1771–1802) foundational formulation from 1800 was still regularly cited in this period: “Life is the ensemble of the functions that resist death.”<sup>15</sup> Along the same lines, and at about the same time, Cuvier (1769–1832) defines life in 1805 as an ability “to resist, for a certain time, the laws which govern inorganic bodies.”<sup>16</sup> For Jules-Auguste Béchard (1817–1887), it is “organization in action.”<sup>17</sup> For the physician and Salpêtrière-associated public health advocate Léon-Louis Rostan (1790–1866), it is a machine whose operation requires the superaddition of nothing: it is “the assembled machine itself.”<sup>18</sup> According to Raymond Pearl, it is a power of living stored in the individual body which is gradually dissipated,<sup>19</sup> and for the German-trained Japanese anatomist Shindō Tokuichi 進藤篤一 (1884–1966), it is “the phenomena produced by physico-chemical processes within a body.”<sup>20</sup> According to Erwin Schrödinger (1887–1961), life is “negative entropy.”<sup>21</sup>

We have a kind of ready-made schematization for understanding different conceptions of life—the division between mechanism and vitalism—but the disjunctures in this series cannot be reduced to it. Nor can they be reduced to a broad division between “realist” or substantialist conceptions, such as we find, say, in the whole late nineteenth-century discussion of protoplasm (Oken, Huxley, et al.), and “nominalist” or agnostic conceptions, such as we find in Claude

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13 Driesch, *The Science and Philosophy of the Organism*, 1908.

14 Cope, *The Primary Factors of Organic Evolution*, 1896.

15 Bichat, *Recherches physiologiques sur la vie et la mort*, 1805 (1800).

16 Cuvier, *Leçons d'anatomie comparée*, 1805.

17 Béchard, *Traité élémentaire de physiologie humaine*, 1866, cited in Bernard, 1878: 22.

18 Rostan, *Cours de médecine clinique*, 1830, cited in Bernard, 1878: 23.

19 Pearl, *The Biology of Death*, 1922.

20 Shindō, “Sheng yu si zhi yanjiu 生與死之研究 (Research on Life and Death),” 1922. I will return to this text below.

21 Schrödinger, *What is Life?*, 1944.

Bernard.<sup>22</sup> Each element is “within the true,” in the sense that it can reasonably be evaluated within the bounds of a given truth regime, and each arises out of a perfectly real and more or less effective practice of intervening in life, *but they are incommensurable*. Within, between, and cutting across these divisions, we find life defined as a force, a system, a process, a substance, a relationship, a capacity or a potentiality, a condition, energy (which is not the same as force), the emergent effect of a system *and* the principle of that system's emergence, and so on. And this is even leaving aside the problems that arise once one settles on one idea or another: If it is a system, what kind of system is it? If it is a condition, what is it a condition *of*? And so on. According to E.A. Schäfer (1850–1935) in his 1912 text *Life: Its Nature, Origin, and Maintenance*, “Everybody knows, or thinks he [*sic*] knows, what life is; at least, we are all acquainted with its ordinary, obvious manifestations. It would, therefore, seem that it should not be difficult to find an exact definition. The quest has nevertheless baffled the most acute thinkers.”<sup>23</sup> So let us not go down that rabbit hole, from which there is no escape, and probably for essential reasons. In one of his later essays, Jacques Derrida takes up this question of life “as such,” life “and nothing more” or “in its pure state” or “itself,” suggesting that it corresponds to no concept at all:

The being of animals is only an example (*zum Beispiel*). But for Heidegger it is a trustworthy example of what he calls *Nur-lebenden*, that which is living but no more, life in its pure and simple state. I think I understand what that means, this 'nothing more (*nur*)'; I can understand it on the surface, in terms of what it means, but at the same time I understand nothing. I will always ask myself whether this fiction, this simulacrum, this

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22 See above, Chapter Two, 73–74.

23 Schäfer, *Life: Its Nature, Origin, and Maintenance*, 1912: 7; this text was translated into Japanese and included as an Appendix in Nagai Hisomu 永井潛's (1876–1957) *Semeiron* 生命論 (*On Life*), first published in 1913. (See previous chapter, p. 125, n. 64; I return to this text again below.) It was then included in Hu Buchan 胡步蟾's Chinese translation of Nagai's book, *Shengming lun*, in 1928. *Semeiron* was translated a second time, in serial form, in 1930 in *Junxu zazhi* 軍需雜誌 (*The Journal of Military Supply*). At the time of its first appearance in 1912, Schäfer's book occasioned a reasonable amount of reportage in the Chinese periodical press. See, for instance, Zhang Xichen 章錫琛, “Xi-fo boshi zhi shengming lun 希佛博士之生命論 (Dr. Schäfer's Theory of Life),” published in *Dongfang zazhi* 東方雜誌 (*Eastern Miscellany*) in 1913.

myth, this legend, this phantasm of what is offered as a pure concept (life in its pure state —[Walter] Benjamin also has confidence in what can probably be no more than a pseudo-concept) is not precisely pure philosophy become a symptom of the history that concerns us here.<sup>24</sup>

That is, philosophy's use of life as a foundational concept situates it *within* the horizon of understanding constituted by the historical transformation that produced the problem of life “as such” in the first place, thus making it a “symptom” of this transformation rather than something that can be used to explain it. The same hold true for any approach that would seek to determine the nature of public health from some definition of its object, life. Instead of trying to *answer* or adjudicate this question—“What is it *really*?”—(which is probably a *question mal posé* in the first place, or more exactly, a question that only makes sense within a certain horizon), let us look instead at the fact of the historical coexistence of all these definitions itself.

The point here is not that “it's all very complicated,” which is perfectly true, but doesn't explain anything. Rather, it is that the political-economic problem of the management and cultivation of labour-power is distributed progressively into the grain of social life, and how this appears in science is as life. As absent as any “true” concept of life may be, there remains a tremendous corpus of texts, knowledges, and practices that reciprocally organize themselves by reference to it, “hovering vaguely around a concept that is nowhere to be found.”<sup>25</sup>

If we want to understand public health as a practice of governing, then, the last thing we should do is to start from a particular definition of life and proceed from there to determine its proper scope and limits, using our definition then to say “this is real public health, that is not.”

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24 Derrida, “The Animal That Therefore I Am (More to Follow),” 2002: 391. There is an implicit critique of Giorgio Agamben here, who also, throughout his work, takes life as logically antecedent to a power that “captures” it within apparatuses (see, for example, Agamben, *What is an Apparatus? and Other Essays*, 2011). This critique is rather more explicit in Derrida's recently-published seminar, *The Beast and the Sovereign, Volume I*, 2009. This line of inquiry continues in *The Beast and the Sovereign, Volume II*, 2011. Such neo-vitalism extends, in a trajectory that will admittedly be of only limited interest to historians of China, to such recent or contemporary thinkers as Gilles Deleuze and Félix Guattari and Michael Hardt and Antonio Negri.

25 Derrida, *The Gift of Death*, 1995: 85.

Alternatively, one might say, “I will take as my object all those measures, knowledges, and theories which proceed from *x* definition of life.” This would capture a certain portion of what goes by the name of public health, but by no means all of it. Trying to determine our field of analysis by life, then, we discover one of two things: either we don't capture nearly enough of what we call public health, or the set of attributes we would need to define life in order to capture enough of it—all of the *x*'s and *y*'s according to which we would say “life is *x* or *y*”—cannot be predicates of any consistent thing. Either we lose public health, or we lose life.

Moreover, if we want to understand the historical relationships between and the effects of the various technologies of knowledge that produce definitions of life, it obviously won't do to assume a definition that is internal to one or another of them. Realists—I'm not sure how many people would claim to be realists today, but it is a kind of epistemological default position—will say: “Well, this is all just because all of these determinations of life are more or less perfect or accurate approximations to an actual state of affairs which obtains regardless of how perfect or imperfect the approximations are.” Fair enough. But, as I suggested in Chapter One with regard to the population, how would we measure the proximity or distance of a given definition of life from some “true” notion or concept of life if not by reference to some *other* definition of life, which would have to have been produced by some *other* technology of knowledge? Unless we want to commit ourselves to pure insight or intuition, but this wouldn't solve the problem. In any case, what we find historically is a ceaseless proliferation of techniques whose principle is the political management of life, a ceaseless elaboration of new levels of possible intervention, the reasons for the oscillations between which have less to do with attempts to approximate ever more closely to *an* object than with the universality of the inscription of life into political problems, and with the proliferation and distribution of interventions directed toward it. The field of governability that is my concern in this chapter is defined by the coexistence of *all* of

these technologies. The principle of the “compossibility” of all of these notions<sup>26</sup>—how they can all exist simultaneously within a given frame of reference—is not to be found in any characteristic of life, but in the dispersal of the theme of life into a social field and in certain formal features of practices of governing. With regard to the historical existence of the field of governability that public health is organized around, we can ask two questions: “How does it exist?” and “How does it work?”

So, instead of taking life as an object to which a group of historical actors in China in a given period might approximate more or less closely, I will here take life instead to be the title of the set of phenomena produced out of the operations of a set of technologies that I will examine in the rest of this chapter. The principle for the inclusion of a practice in this set will be the possibility of its giving rise to claims of the form “life is ...”. That is, if a practice can reasonably produce or is structurally linked to theorizations of what life is, then it can be included in the set. The first element of this set that I will treat, and not for accidental reasons, is the epidemic of pneumonic plague in Manchuria in 1911.

### THE MANCHURIAN PLAGUE

The central focus of the epidemic of pneumonic plague in Manchuria was the city of Shenyang 瀋陽, or Mukden, which had in preceding decades become the major point of exchange for the circulation of migrant workers going north to work in Japanese mines, for Chinese families moving into Manchuria to settle in Liaodong, and for the transport of the products of the primary industries of region south into China proper.<sup>27</sup> With the deforestation and land clearance that attended permanent settlement on a fairly large scale, fur trappers were compelled to

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26 The term is from Badiou, *Being and Event*, 2005.

27 See Thomas R. Gottschang and Diana Lary, *Swallows and Settlers*, 2000, and James Reardon-Anderson, *Reluctant Pioneers*, 2005, on the background to this migration.

venture further and further north into the forests to find the animals whose furs provided their means of livelihood, and as they did so, they entered plague reservoirs that they had previously avoided. When they brought the plague back with them to Shenyang, it spread rapidly through the crowded and dirty living quarters of the migratory labourers, and then, as quickly, north and south along the new rail lines that all passed through Shenyang.

After the organization of an initial governmental response,<sup>28</sup> the city was divided into seven police districts, each with a Plague Prevention Office (防疫局 *fangyiju*) with twelve police officers assigned to plague-related duties, two doctors, and a team of coolies to serve as stretcher bearers, carters, and gravediggers. Third-class rail transportation was prohibited, and traffic between districts was strictly controlled, using a system of flags to indicate whether people and vehicles had been inspected, and how recently. Large gatherings of any kind were prohibited by police order; markets, brothels, and bathhouses were shut down; and celebrations of seasonal festivals were forbidden. Each of the eight gates of the city wall was guarded, and the roads outside the city were patrolled to prevent escape. Daily tours of inspection were made by sanitary police, dressed in clean white overalls and masks, during which all cases, deaths, and other relevant developments were recorded and reported to the Plague Prevention Bureau (防疫處 *fangyichu*). When unsanitary dwellings were found, constables were dispatched to see that they were cleaned, and if a case of plague was discovered, the district police station was notified, the residents conveyed to the nearest isolation hospital—six were established around the city—the patient's belongings were burned, and the house disinfected and put under guard.

<sup>28</sup> The following description relies on Carol Benedict, *Bubonic Plague in Nineteenth-Century China*, 1996, and Richard Pearson Strong, et al., *Report of the International Plague Conference Held at Mukden, April, 1911*, 1912. The 1911 Manchurian plague continues to interest scholars worked in a number of different areas. Besides the aforementioned Nathan, *Plague Prevention and Politics in Manchuria, 1910–1931*, 1967, more recent studies include Mark Gamsa, “The Epidemic of Pheumonic Plague in Manchuria, 1910–1911,” 2006, and Sean Hsiang-lin Lei, “Sovereignty and the Microscope: Constituting Notifiable Infectious Disease and Containing the Manchurian Plague (1910–11),” in Angela Ki Che Leung and Charlotte Furth, eds. *Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century*, 2010.

Let us ask an apparently stupid question: What exactly is being managed by all of these techniques? Of course the answer is “plague,” but if we then ask what plague is, we can give three distinct but entirely correct answers, in the set of which lies the key to the problem. At one level, plague refers to a specific organism, *Yersinia pestis*, a species of bacillus.<sup>29</sup> At another level, it refers to a particular condition of disease insofar as it is present in a human being, that is, to a defined symptomatology. At yet another level, plague refers to a distribution of conditions within a defined *group* of human beings, called an epidemic. Plague refers simultaneously—it is not a matter of deciding which of these meanings is the really true one—to three scales of phenomena: a microscopically organized non-human environment, a human body and its experiences and transformations, and a kind of transhuman field in which distributions of phenomena can be detected, measured, and tracked.

The apparatus of plague management is defined by its relationship to this tripartite domain, having as its intention the management of the set of points at which these three levels intermingle and become indistinct from each other. To each level corresponds a particular series of interventions. At the level of the environment, rat and tarbagan extermination campaigns<sup>30</sup> and rat-proofing of dwellings, the filling in of swamps and other plague reservoirs, and so on. At the level of the human body, a general system of prophylaxis, embodied most clearly by the hygienic mask and suit, and vaccination, which physically alters the material composition of the body in order that its resistance to a particular pathogen is increased. And at the level of the population, the demarcation and regulation of spaces and circulations, hospitals, policing, detention camps, and all the urban knowledge that determines their distribution and density.

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29 Of course, it did not and could not have referred to this before 1896, when Alexandre Yersin (1863–1943) reported his isolation of the plague bacillus in Hong Kong—an act for which the bacillus was named after him, even though Kitasatō Shibasaburō 北里柴三郎 (1853–1931), to whom we will return below, discovered it independently several days before Yersin did.

30 Tarbargans, a species of marmot, were held to be the bearers of the fleas which were in turn the bearers of plague to the human world; see Wu Lien-teh, et al, eds. *Plague: A Manual for Medical and Public Health Workers*, 1936.

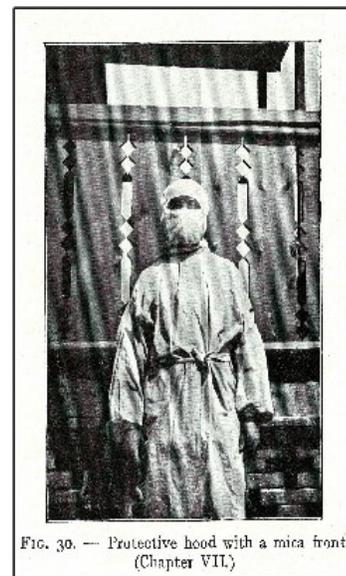
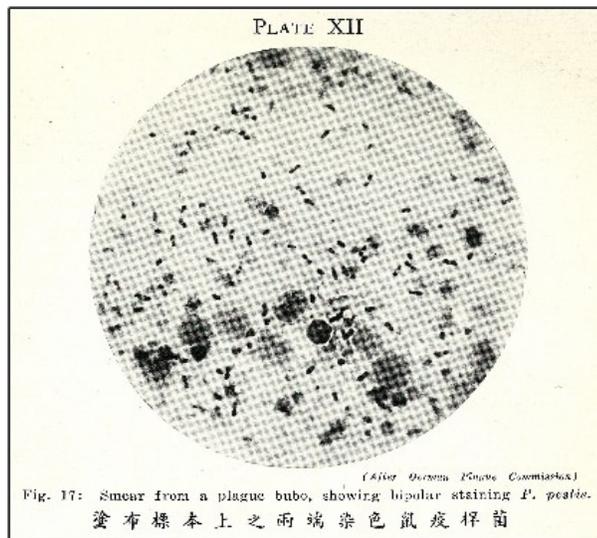


Figure 4.1: The microscopic scale of plague, the human scale, and the scale of the population (Source: Strong, et al., 1912).

These are the domains into which the apparatus moves, and the point, if we can call it a point, on which they all bear is the passage between the human and the non-human (within a body, at the boundary between a body and its immediate environment, and at the level of the population), and in this passage is discovered not a boundary that is more or less clear but a whole nexus of interconnections that links a group of people constituted as a population to a disease-producing environment. Plague management does not take the human body as its focus, except incidentally, and certainly not the “subject” who resides therein (except insofar as a subject and its activities can be oriented as a conduit for transmitting force into this field). This is clearly recognized by Wu Changyao 伍長耀, Chief Technical Expert (簡任技正 *jianren jizheng*) for the National Quarantine Service and one of the co-authors of *Plague: A Manual for*

*Medical and Public Health Workers*: “General prophylaxis against bubonic plague is based upon its primary relation to rodents and their ectoparasites. *Man comes into the picture only, as it were, by accident.*”<sup>31</sup> Thus, the population is a totally desubjectified object, even if its care and management proceeds by way of subjects. The primary function of this apparatus is not to “mark” this boundary, an inside and an outside, and not to establish it once and for all. Its function is to distribute itself into the field that is revealed by the discovery of its non-existence, and to concern itself with the relationships between phenomena that this field presents.<sup>32</sup>

The object of plague control, then, is a multi-scalar field of conditions of an event, plague. It is a “milieu” that produces events and through which events unfold, and that is discovered in relation to a particular event. Events end, but *milieux* remain. When the object of the apparatus begins to be less an event (plague) and more the milieu itself out of which the event emerges, in its regular rather than its exceptional state, then we have the real beginning of public health. The management of epidemics as events produces, as the correlate to an apparatus of intervention, a field of governability, a new set of pertinent elements and relationships between them, which then remains after the event has subsided, and which becomes the object not of crisis response but of environmental management. Public health begins—historically and logically—when the object of the apparatus ceases to be plague and becomes life, which is a kind of figure–ground reversal. This is a mode of intervention which, in some respects, seeks to have as little as possible to do with people and their subjectivities. We would thus miss their proper action if we confined ourselves to analyzing how it is refracted through subjectivities.

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31 *Ibid.*, 424, emphasis added.

32 This basic method continued to be the response in new outbreaks, for instance in the outbreak which occurred in Shanxi, Shaanxi, and Inner Mongolia in 1917–1918, with the difference that instead of seconding low-level police constables and coolies to the various daily medical tasks associated with managing the outbreak, already-existing teams of relatively trained personnel could be distributed out from the NMPPS and from various medical schools in China, organized by the Shanxi Plague Prevention Bureau (山西省防疫事務總管理處 *Shanxi sheng fangyi shiwu zong guanli chu*) which had been organized on the model of the NMPPS in 1916 under the direction of C.W. Young (see Arthur Stanley, “Report of the Shansi Plague Prevention Bureau, 1918,” 1918).

The Manchurian plague and the related activities also gave a powerful impetus to the involvement of the Chinese medical and public health fields in the developing domain of global public health that was emerging in this period, the next stage of which would be the organization of the League of Nations Health Organization (LNHO) and the emergence of a global philanthropic system in the 1920s.<sup>33</sup> It secured and deepened connections to the epidemic management and public health systems of other countries, including the advanced capitalist countries, for whom a global health management system was becoming ever more necessary due to the fact that the deepening and widening global circulations of commodities and people were bringing in their train a correlate series of new epidemics and diseases: commodity vectors were also disease vectors, and these were met with new vectors for the international supply of medical equipment, practices, and expertise.<sup>34</sup> If it accomplished nothing else—there is a long technical debate on whether the measures taken were effective or could have been more effective; in fact, the issue of whether the epidemic would have been any worse if nothing at all

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33 For the background to these developments, which involved the emplacement of global systems for the control of international flows, see, among other works, Edwin Ackerknecht, “Anticontagionism between 1821 and 1867,” 1948; Norman Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 1975, and *idem.*, *International Public Health Between the Two World Wars: The Organizational Problems*, 1978; Paul Weindling, ed., *International Health Organizations and Movements, 1918–1939*, 1995; Peter Baldwin, *Contagion and the State in Europe, 1830–1930*, 1999; Alison Bashford and Claire Hooker, eds., *Contagion: Historical and Cultural Studies*, 2001; Alison Bashford, *Imperial Hygiene: A Critical History of Colonialism, Nationalism, and Public Health*, 2004; and Alison Bashford, ed., *Medicine at the Border: Disease, Globalization, and Security, 1850 to the Present*, 2006.

34 There were actually a number of possible sources of plague vaccine, international regulation of vaccine production not being introduced until well into the twentieth century. One possible source was the aforementioned Kitasatō Shibasaburō's Institute for Infectious Diseases (伝染病研究所 *Densenbyō kenkyūjo*) in Tokyo, which was one of the major producers of vaccine and other medical products established in Japan during the Meiji period. For more of this history, see M. Miyajima, “The History of Vaccination in Japan,” 1923, and Ann Jannetta, “Public Health and the Diffusion of Vaccination in Japan,” 2001. For somewhat later developments in China, see Huang Tsefang, “Vaccines and Serums and Their Production in China,” 1926. On the history of private, gentry-organized inoculation and vaccination in China, especially in Guangzhou, see Angela Ki Che Leung, “The Business of Vaccination in Nineteenth-Century Canton,” 2008. Kitasatō's Institute also trained Arthur Stanley, the Public Health Commissioner of the International Settlement of Shanghai, in 1898, providing him with the tools necessary to establish a Pasteur Institute there—other resources came from the Saigon Pasteur Institute under Paul-Louis Simond (1858–1947)—as well as Chen Fangzhi, to whom I will return at length below.

had been done came up at the conference itself<sup>35</sup>—the plague conference in Mukden brought together a set of people from a number of countries who were themselves linked into systems of supply and distribution. When a number of the central figures in the NMPPS also got involved in the National Medical Association in the mid-1910s, and linked up their networks to those of other people, a further set of channels for the installation of public health capacity in China was created. The network of international health to which the plague conference linked China ran through places like Tokyo, Saigon, Singapore, Jakarta, Bombay, Madagascar, Odessa, Kronstadt, Geneva, Paris, Berlin, and San Francisco, Los Angeles, and Panama.<sup>36</sup> The NMPPS and the NMA were the central loci for the organization of funding, overseas training, and employment of China's public health corps.

#### RESEARCH ON LIFE AND DEATH

If the presence of the subject in the legal or even philosophical sense is literally incidental, “the” human body—whatever that is—is absolutely essential, but in a very novel and interesting way. If, in a system of law, when one reaches the legal subject one must stop—one reaches the bedrock, as it were, beyond which it is not possible to analyze further—this is not at all the case with regard to the human body, which for public health is nothing like a “primary datum” or ultimate unit. It is, rather, just one of many spatial and temporal scales at which processes occur, and not even necessarily the central one. As life comes to be enveloped in a whole set of scientific apparatuses, we find a corresponding proliferation of analyses of death. Just as life is broken up into analytically discrete processes occurring at various levels, death also

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35 See Strong, et al., *Report of the International Plague Conference Held at Mukden, April, 1911*, 1912: 194–196 and 210–217.

36 For the institutional connections of the conference participants, see *ibid.*, vii–ix. A good deal of discussion was devoted to the question of medical supply and the comparative effectiveness of different vaccines; see esp. 98–135. Alexandra Minna-Stern's *Eugenic Nation*, 2005, provides a useful history of the North and Central American elements of this emerging global system.

progressively loses its coherence as a unitary phenomenon, a transition from one state to another that occurs in an instant. It too ceases to be a line or a boundary. It is broken up and redistributed into a series of processes subject to a variety of temporalities, around each of which is developed a series of interventions.

Take, for instance, an article by the German-trained Japanese physiologist Shindō Tokuichi, which was translated into Chinese and published in *Dongfang zazhi* in 1922 as “Research on Life and Death” (生與死之研究 *Sheng yu si zhi yanjiu*).<sup>37</sup> It is a report on the results and implications of recent studies on death from around the world, from August Weismann (1834–1914) in the 1880s<sup>38</sup> to the 1910s, and on the debates that accompanied these studies. In these discussions, one finds a proliferation of kinds, scales, and rhythms of death: cellular death,<sup>39</sup> organ death, tissue death, blood death, partial death,<sup>40</sup> general or somatic death, and false death (假死 *jiasi*).<sup>41</sup> (Brain death is a later development that belongs to the same trajectory.)<sup>42</sup> Death vanishes as a “moment,” as a clearly defined state, and is reallocated, so to

37 Shindō went to Europe in 1911 to study anatomy and morphology, first at the Anatomical Institute of Göttingen under the anatomist and anthropologist Friedrich S. Merkel (1845–1919), then at the Anatomical Institute of Königsberg under Ernst Gaupp (1865–1916)—a student of Ernst Haeckel, whom I discussed in Chapter Two in connection with the notion of protoplasm—and finally at the University of Vienna under the comparative anatomist Ferdinand Hochstetter (1861–1954). He returned to Japan in 1914, upon the outbreak of the First World War, and took a position as instructor of anatomy in the Department of Medicine at the Kyūshū Imperial University in Fukuoka. Within a year he was promoted to full professor, and he spent the remainder of his career there until he retired in June 1945, ostensibly on account of having reached the mandatory retirement age (though there may have been other reasons: At precisely this time—May and early June—faculty and students in the Surgery Division of the Department of Medicine were engaged in the experimental vivisection of eight American POWs, for which several of them were convicted of war crimes. The director of the experiments, Fukujiro Ishiyama 石山福二, committed suicide before trial. On this, see Timothy Lang Francis, “To Dispose of the Prisoners’: The Japanese Executions of American Aircrew at Fukuoka, Japan, during 1945,” 1997). See Mori Suguru, “The Late Dr. Shindō Tokuichi,” 1966. I am indebted to Robban Toleno for translating this article for me.

38 The debate was really initiated by the publication in English of Weismann's essay, “Death,” in 1883. See Weismann, *Essays upon Heredity and Kindred Biological Problems*, 1891, and *Germ-plasm: A Theory of Heredity*, 1893.

39 See, e.g., Noel Paton, “On Hypatic Glycogenesis,” 1894.

40 Richard Hertwig, “Über die Ursache des Todes (On the Causes of Death),” 1906, cited in C.S. Minot, *The Problem of Age, Growth, and Death: A Study of Cytomorphosis*, 1908.

41 Shindō, “Sheng yu si zhi yanjiu,” 1922: 57.

42 For the debates in the 1960s around brain death, see the essays collected in Donald R. Cutler, ed.,

speak, to processes occurring at a variety of scales within the body. There were also debates over whether death was an immanent result of vital processes or the result of external influences; a central figure here was Ilya Ilyich (I.I.) Mechnikov (1845–1916)—whose theories are discussed in Shindō's article—who developed his theories about the accidental nature of death while he was head of the Immunology Program at the Pasteur Institute in Paris (where he also trained Wu Lien-teh in 1902) and effecting a shift in epidemiological emphasis from the external agents that attack a living organism to the internal characteristics of an organism that provide it with defenses against those agents.<sup>43</sup> Hence all the statements one finds in the early twentieth century about how “people think life and death are like white and black, but the latest science is telling us that this is not at all the case.” As E.A. Schäfer put it in 1912, in the aforementioned *Life: Its Nature, Origin, and Maintenance*: “Recent advances in knowledge have suggested the probability that the dividing line between animate and inanimate matter is less sharp than it has hitherto been regarded.”<sup>44</sup> One no longer really dies, so much as one is “conducted toward” death by a series of nonsynchronous processes. “The” body, as a spatial, scalar, and temporal matrix, is incessantly carved up, and in the temporal disjunctures between these various scales and kinds of death are discovered new methods of augmenting life. For instance, the discovery by Alexis Carrel in the early twentieth century of a “vegetative cellular activity” and elasticity in organs for a period of time *after* somatic death, which opens up the possibility of organ transplantation.<sup>45</sup> Schäfer cites the prolongation of the lives of white blood

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*Updating Life and Death: Essays in Ethics and Medicine*, 1969.

43 See Metchnikoff, *The New Hygiene: Three Lectures on the Prevention of Infectious Diseases*, 1906, and *idem.*, *The Prolongation of Life: Optimistic Studies*, 1910. For more on Mechnikov, see Bruno Latour, *The Pasteurization of France*, 1988, and Alfred I. Tauber and Leon Chernyak, *Metchnikoff and the Origins of Immunology: From Metaphor to Theory*, 1991.

44 Schäfer, *Life: Its Nature, Origin, and Maintenance*, 1912: 7. Recall here that, according to Foucault, in *The Order of Things*, the dividing line had only been *drawn* by Cuvier in his *Le Règne animal* in 1817. Of course, not all historians of science accept this.

45 See, on this, William Ewart, “The ‘Elastic Tissue’ Enigma: A Suggestion for Its Post-Mortem Study, in Arteries kept Permanently Elastic, and in the ‘Roosevelt Elastic Lung,’” 1915.

cells and the cells of various organs for several weeks after “general death.”<sup>46</sup> Somewhat earlier, August Weismann described life as defined by its position within the interplay of two altogether different temporalities: the mortality of the somaplasm on the one hand (the non-reproductive cells of an organism which weaken and die), and the immortality of the germplasm on the other (the reproductive cells which replicate themselves identically forever).<sup>47</sup> That is, non-synchronicities of deaths at a variety of levels is the condition of possibility of techniques designed to augment life at other levels.<sup>48</sup> (Here emerges the whole question of the medium of the transmission of properties that would obsess eugenists.) The possibility arises of redefining death not as “the extinction of life” or cessation of activity but as “the destruction of the necessary conditions of life,” and this is linked to a further division of the field of life according to what we might call its *mode* or *degree*, so that we have on the one hand the distinction between “potential” and “actual” life, and on the other hand the division of life into latent (a seed), oscillating (a reptile), and free (a mammal) modes.<sup>49</sup>

This is not just “fuzziness at the edges,” such that we could say, “sure, there might be some limit-cases, but basically life and death are discrete sets.” As with the apparatus of public health, medicine does not find its function in determining once and for all where the boundary between life and death lies and in policing that boundary. Its function is, in a sense, exactly the

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46 Schäfer, *Life: Its Nature, Origin, and Maintenance*, 1912: 34.

47 See again, Weismann, *Germ-plasm: A Theory of Heredity*, 1893. According to Schäfer, “when we consider the body as a whole, we find that in every case the life of the aggregate consists of a definite cycle of changes which, after passing through the stages of growth and maturity, always leads to senescence, and finally terminates in death. The only exception is in the reproductive cells, in which the processes of maturation and fertilization result in rejuvenescence, so that instead of the usual downward change towards senescence, the fertilized ovum obtains a new lease of life, which is carried on into the new-formed organism. The latter again itself ultimately forms reproductive cells, and thus the life of the species is continued” (1912: 35).

48 Or again—taking a later case—the example of the Hela cell line (discussed in *Updating Life and Death*, where brain death is also discussed): a culture derived from the cervical cells of Henrietta Lacks (hence, He-La) whose consequent “immortality” and global distribution makes “her” “the most ubiquitously alive person in history” (Cutler, 1965).

49 Recall the discussion of Claude Bernard in Chapter Two, p. 73, n. 45.

opposite: to disassemble the phenomena that produce the “common sense” image of death, to station itself within the disjunctures thus produced, not to reduce them to a single definition but on the contrary to maximize their productivity in terms of managing life.

### THE APPARATUS OF ENVIRONMENTAL MANAGEMENT

While nothing like a functioning and comprehensive state health system came into existence during the Republican period, there was nevertheless a good deal of work devoted to the management of the nexus of interconnection thus revealed, to the emplacement of procedures of intervention within it. To each of these measures corresponded a concrete instrumentation: requirements of supply, buildings, the purchase of materials on the market, logistical networks, bureaucratic hierarchies and new relations between levels of government and their functions, and between these and social life,<sup>50</sup> training facilities, and so on. In this renetworking, in this installation of public health capacity, we find the real body of public health, stationed and operating constantly within a field that it generated, called “life.” It was not created all at once: The port health and quarantine functions under the China Maritime Customs date from 1873, and were “recovered” to Chinese sovereignty in 1930 (see above). From 1915, most cities, under the Municipal and County Organization Laws, placed sanitary work under the charge of the police system.<sup>51</sup> And in March 1919, the Central Epidemic Prevention Bureau (中央防疫處 *Zhongyang fangyichu*) was established in Beijing, with branches in Shanghai and Guangzhou.<sup>52</sup>

After the establishment of the Nationalist government in 1928, provincial governments

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50 Recall, in this connection, the organizational chart of the Nanjing Municipal Vital Statistics Coordinated Office in the previous chapter, p. 111.

51 See N.A., *Xianzhi hukou biancha guize, jingchating hukou biancha guize* 縣治戶口編查規則, 警察廳戶口編查規則 (*Regulations for the Registration of Households by County Administrations and by Police Departments*), 1915.

52 *Zhongyang fangyichu* 中央防疫處, *Zhongyang fangyichu shi-er zhou niankan* 中央防疫處十二周年刊 (*Twelfth Annual Report of the Central Epidemic Prevention Bureau*), 1931.

were reorganized (where they could be) and sanitary work was placed under the Civil Administrations, and then, progressively through the 1930s, specialized systems were established in many cities and provinces. In 1930, the National Central Hospital (國立中央醫院 *Guoli zhongyang yiyuan*) was established in Nanjing. The Central Field Health Station (衛生實驗處 *Weisheng shiyanchu*) under the National Economic Council, established September 26, 1931, was divided into eight departments: Epidemiology (防疫檢驗系 *fangyi jianyanxi*), Pharmacology (化學藥物系 *huaxue yuewuxi*), Parasitology (寄生蟲學系 *jisheng chongxuexi*), Environmental Hygiene (環境衛生系 *huanjing weishengxi*), Social Medicine (社會醫事系 *shehui yishixi*), Women's and Children's Health (婦嬰衛生系 *fuying weishengxi*), Industrial Hygiene (事業衛生系 *shiye weishengxi*), and Public Health Education (衛生教育系 *weisheng jiaoyuxi*). The Central Epidemic Prevention Bureau (which had moved to Shanghai by 1937) was divided into a Serum Unit (血清室 *xueqingshi*), a Vaccine Unit (疫苗室 *yimiaoshi*), a Cowpox Vaccine Unit (痘苗室 *doumiaoshi*), a Diphtheria Toxin Unit (白喉毒素室 *baihou dusushi*), a Refrigeration Unit (冷藏室 *lengcangshi*), and a Distribution Unit (分裝室 *fenzhuangshi*), charged with the coordination of the distribution of all the chemicals and sera produced at the Institute, according to the requirements revealed by the reporting systems I discussed in the previous chapter.

With the shift from crisis response to environmental management, the space is opened for sanitary engineering, which has as its task the adjustment of the environment in order that the space available for life becomes as capacious as possible. This brings a whole series of elements into relation with each other as factors the proper arrangement of which equals the more efficient generation or maintenance of life. One of the first domains to be isolated was what was called “the method of living” or “customs,” on to which might be “grafted” the techniques of

public health.<sup>53</sup> This is the terrain of hygienic education. Again, public health must work with and through a field of givens, and the mode of life of the population is one of these. Here, culture becomes an instrument, a set of adjustable beliefs and behaviors, each of which redounds immediately upon the production of life.<sup>54</sup>

We should ask, though: What is being made more efficient, and what is this efficiency a function of? Here we must return to the idea that there are lesser and greater degrees of being alive, that forms of life can be arranged on a quantitative continuum from the “least” alive to the “most” alive, the measure being the ability to work relative to the possibilities given by the nature of the organism. In this sense, life becomes amenable to a quantitative analysis whose term is, again, *vitality*. So what is vitality a function of? Returning to Raymond Pearl—who, we remember, trained a good percentage of the high-level public health personnel in Republican China—it “will always finally depend upon the rate of energy transformation of the organism within defined limits of space and time. Any functions involving this rate . . . may be used as a measure of 'aliveness' or vitality.”<sup>55</sup> Thus, aliveness can be measured quantitatively along a continuum that runs from zero (non-aliveness) to the maximum of life (“good health in the prime of life”). It is a measure of the ability of an organism to convert energy from the natural system to the organic system, and by extension to the social system, health being a function of the nexus formed by “external sources of energy and non-living matter,” the “organic system”

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53 This was the central thematic concern of the first several issues of *Zhonghua yixue zazhi* 中華醫學雜誌 (*The National Medical Journal*). See, for instance, all from this journal, Arthur Stanley, “How to Initiate Public Health Work in Chinese Cities. Some Practical Details,” 1915, and *idem.*, “The Sanitary Organization of China,” 1915; Wu Lien-teh, “Foundations of Modern Hygiene in China,” 1916; H.J. Shu, “Some Attempts at Sanitary Reform at Hankow Since the Revolution of 1911,” 1916; Tang Erhe, “Ying'er baoyu fa 嬰兒保育法 (Methods of Raising Infants),” 1916; and Ida Kahn, “Home Hygiene,” 1916.

54 The reverse situation, in which culture refracts and provides a “context of understanding” for the development of public health, is the dimension in which we are more familiar with analyzing public health.

55 Pearl, *The Rate of Living*, 1928a: 98–99. He suggests a variety of possibilities: the rate of metabolism, the rate of growth, or the rate of movement.

(“the individual”) and the social system (“society”). Thus, a level of health may be ascribed to a population, defined precisely as the aggregate of a quantity of particular material and a quantity of energy, the relationship between which gives the level of health of a given population. (More material—that is, more people—per quantity of energy gives a sicker population, while more energy—that is, labour-power—per quantity of material gives a healthier population.) Vitality is the variable capacity to transform energy in an environment into the possibility of work: as this transformation is more efficient, there is more vitality. Pearl provides the following schema:

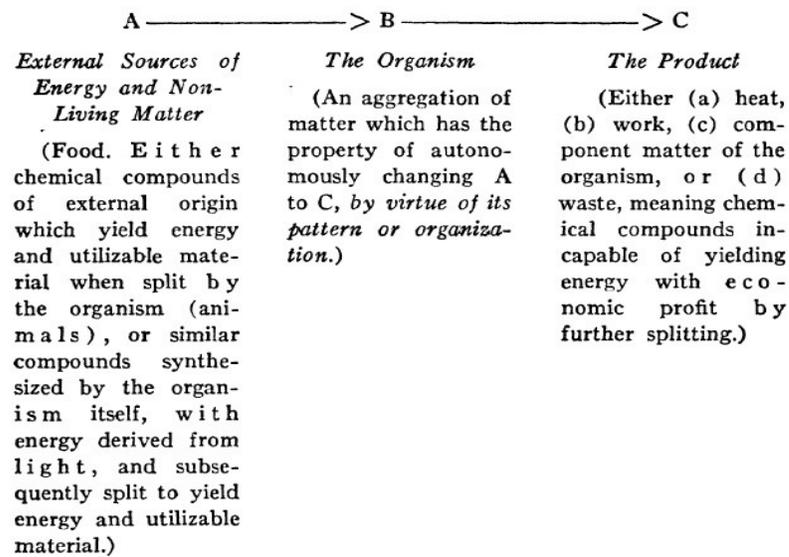


Figure 4.2: Schema of an organic system (Source: Pearl, 1928a: 100).

This transfer of energy from an environment to an organism and its organization there so that it may work takes place through and can be measured at three levels, the same three levels we found at work in the apparatus of plague management: the cell, the body, and the population. Each level and the relations between them are theoretically amenable to quantitative analysis.

In *On Life* (生命論 *Seimeiron. Shengming lun*),<sup>56</sup> the prominent Japanese eugenicist Nagai Hisomu argues, echoing this line of thought that runs from Helmholtz and others in the mid-nineteenth century, that a given material arrangement of a body *equals* a particular quantity of

<sup>56</sup> See above, n. 23.

available energy. Nagai's relationships with key figures in the installation of public health in China were long and close, and almost all of his books were translated into Chinese, with *On Life* actually being translated twice. It is in view of this quantitative conception of vitality that he calls the living body “a kind of energy-transformer” (能之轉換器 *neng zhi zhuanhuanqi*), which, exactly as a turbine converts the force of water into electricity and a dynamo converts movement, converts energy from the environment (chiefly through nutrition and metabolism) into “heat, movement, and electricity.”<sup>57</sup> All of the qualitative transformations involved in nutrition, in order that they may be analysed quantitatively, must be reduced to their common element, in this case, to a specific unit of energy, the calorie (加羅里 *jialuoli*), that is, the amount of energy required to heat one gram of water by 1°C, measured by a (bio)calorimeter ([生體] 熱量表 [*shengtǐ*] *reliangbiao*).<sup>58</sup> According to the principle of the conservation of energy, no energy is lost in all of these transformations (just as, in an economic exchange, no value is lost in the exchange of equivalents); it is just converted (轉換 *zhuanhuan*) from one form to another, as this is as true for the organic world (有機界 *youjijie*) as it is for the inorganic world (無機界 *wujijie*), and for the circulations which occur between them. From this derives the two basic principles of vital dynamics: the principle of constancy in the total quantity of energy (不變律 *bubian lǜ*, or “Konstanzprinzip”), and the principle of the equivalence (interchangeability, convertability) of forms of energy (等價律 *dengjia lǜ*—literally, the principle of equal *values*—or “Aequivalenzprinzip”).<sup>59</sup>

It remains, then, to measure, and thus to distribute along a quantitative axis, the different degrees of efficiency according to which these various transformations occur. Death, of course,

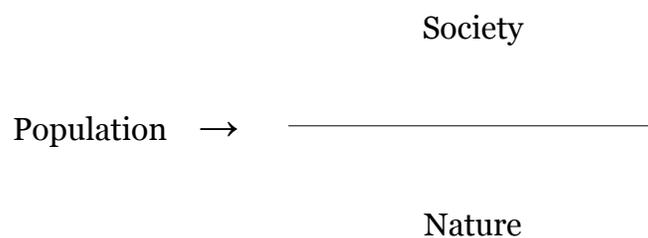
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57 Nagai, “Shengming lun 生命論 (On Life),” 1930: 55.

58 *Ibid.*, 53.

59 *Ibid.*, 52.

is the zero-point of efficiency in this regard. Illness diminishes it, as does poor nutrition, senescence, and so on, while development to adulthood, possessing good genetic or hereditary material, and a healthy diet and regular exercise all increase it. The good health of a population is a function of a proper adjustment of its internal environment—its *milieu interieur* (society)—to its external environment (nature). Managing the factors that contribute to the greater or lesser felicity of this adjustment is the task of public health. Preventing deaths, for instance, is equal to staunching the loss of energy from the social system back to the natural system, through what lies between them, the population.<sup>60</sup> We get something very like the following, with efficiency being something like the product of the differential rates of movement of energy upward and downward:



Public health consists in facilitating the transfer of energy upward and reducing its movement downward, thus achieving an accumulation of energy (value) within a given society. This schematization establishes the form of the relations between all the multitudinous factors with which public health concerns itself. It is the matrix of its entire field of activity.

One might argue that this research on longevity takes up and scientizes a longstanding form of practice in East Asia—Daoist immortality techniques—and certainly the inclusion of terms from that tradition takes place. But that particular set of practices was never related to the wealth of the nation and the usefulness of the population. The pursuit of immortality seems indeed to have been anti-statist in orientation, and associated with a withdrawal of energies from the

<sup>60</sup> Of course *some* energy will inevitably return to nature, but now this is seen as waste.

sphere of crude social use and labour.<sup>61</sup> Whatever the case, if the notion of the organism seems very complicated here, that is precisely the point, since it is being deployed and remolded in the context of a very complicated series of interventions, geared toward the augmentation of health and, directly, to an increase of social wealth. It is a matter, then, not of withdrawing life from the sphere of use and labour in order to preserve it from exhaustion, but of inserting it into that sphere, of enabling productive activity to grow continually without exhausting the vital energies of the population.<sup>62</sup> This will lead us, rather circuitously, back to the domain of economic organization in the next chapter. If the objective was to turn the system of vital production from an accidental, haphazard, and wasteful one into a deliberate and efficient one, one of the primary social sites of these efforts was the rural sector—for many, the very image in the early twentieth century of the haphazard and the wasteful. It is all very well to improve the system of vital production, but how is one to ensure that all of this vitality doesn't go to waste? One option: Neomalthusianism. Reduce the amount of it that is produced in sectors in which there is no use for it, specifically China's "vast rural population." Another option: National economics. To rearrange the distribution of land, labour, and capital. They are not mutually exclusive, however much the participants in these debates may have felt themselves to be implacably at odds with each other. Their disagreements pertain really to moral considerations that are inessential to the field of problems that they completely share.

Let us take as our guide here Chen Fangzhi, whose *Public Health and Public Health*

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61 Joseph Needham, *Science and Civilisation in China, Vol. 2: History of Scientific Thought*, 1969: 89–99 and 139–153; Zhang Youjun 張有雋, et al., *Zhongguoren de yangsheng zhi dao* 中國人的養生之道 (*The Chinese People's Way of Preserving Life*), 1992.

62 One finds here the problem of "neurasthenia" (神經衰弱 *shenjing shuairuo*). Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, 1992, provides an excellent discussion of the scientific methods devised to deal with this "modern" problem in the late nineteenth century. For a fascinating discussion of the "modernity" of the problem of psychological dissipation in China, and its links to "bourgeois subjectivity," see Shu-mei Shih, *The Lure of the Modern: Writing Modernism in Semicolonial China*, 2001. Cyrus Schayegh, *Who is Knowledgeable is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900–1950*, 2009, tracks the emergence of similar problems in Iran.

*Administration* (衛生學與衛生行政 *Weishengxue yu weisheng xingzheng*), published in 1934 when he was Director of the Central Public Health Laboratory in Shanghai,<sup>63</sup> was the definitive text on sanitary engineering in Republican China.<sup>64</sup> Chen received a portion of his training from the Institute for Infectious Diseases in Tokyo, where he studied parasitology. After completing his studies in 1926, he returned to China and, making the acquaintance of Chiang Kai-shek, took a position as Director of the Medical Office of the General Affairs Bureau in the National Revolutionary Army (國民革命軍 *Guomin gemingjun*). He was briefly Director of the Public Health Office (衛生司 *Weishengsi*) under the Ministry of the Interior (內政部 *Neizhengbu*) in 1928, before taking up the Directorships of the Central Public Health Laboratory and of the Gulou 鼓樓 Hospital in Nanjing.<sup>65</sup>

The specificity of public health as a practice, *vis-à-vis* medicine, is marked out at the

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63 The Central Public Health Laboratory was established in December 1929 on the recommendation of Ludwig Rajchman, a representative of the League of Nations Health Organization who led a medical advisory mission to China in 1929; see Gong Chun, “Zhongguo minguo de weisheng zuzhi 中國國民的衛生組織 (Public Health Organizations in the Republican Period),” 1989; Zhang Daqing 張大慶, “The Prevention and Treatment of Communicable Diseases: The Beginning of the Institutionalization of Modern Chinese Medicine,” 2003, and *idem.*, *Zhongguo jindai jibing shehui shi* 中國近代疾病社會史 (*A Social History of Disease in Modern China*), 2008. The CPHL, along with the Shanghai Municipal Public Health Laboratory (with which it shared its premises), was an essential training facility in the development, through the 1930s, of further laboratories under provincial administrations, such as the Gansu Public Health Laboratory, established September 1934, the Ningxia Public Health Laboratory, established December 1934, the Zhejiang Public Health Laboratory, established July 1935, and the Yunnan Provincial Public Health Laboratory, established August 1935 (China Neizhengbu, *Weisheng tongji*, 1938: 10–15; Zhang, “The Prevention and Treatment of Communicable Diseases,” 2003). The Central Field Health Station was also involved in this work, assisting in the establishment of further laboratories in Hangzhou 杭州, Qingpu 青浦, Shaoxing 紹興, and Qu 衢 County (Zhejiang); see Liu Ruiheng, “San nianlai zhongyang weisheng sheshi gaikuang 三年來中央衛生設施概況 (A Survey of Central Public Health Facilities in the Last Three Years),” 1934: 275.

64 This text has recently been analyzed by Sean Hsiang-lin Lei, in “When Chinese Medicine Encountered the State: 1910–1949,” 1999, and in “Weisheng weihe bushi baowei shenging? Minguo shiqi de bielei de weisheng, ziwo yu jibing 衛生為何不是保衛生命? 民國時期的另類的衛生, 自我與疾病 (Why *Weisheng* is Not about Guarding Life: Alternative Conceptions of Hygiene, Self, and Disease in Republican China),” 2008.

65 Anon., “Minguo yishi mingshi lu: Chen Fangzhi 民國醫界名士錄 1: 陳方之 (Prominent Doctors of the Republic, Part 1: Chen Fangzhi),” 1929; Zhang Mingdao 張明島, *Shanghai weisheng zhi* 上海衛生志 (*Gazetteer of Shanghai Public Health*), 1998: 646.

beginning of Chen's book by a dual differentiation. First, medicine

1. Studies disease
2. Studies the phenomena presented by and the reasons for the modulation of living functions, as well as methods of dealing with them

Thus,

3. Physiology is the study the phenomena of and the reasons for the constancy (or persistence) of living functions within the body

Public health, on the other hand,

1. Studies health
2. Studies the factors and the methods that contribute to protecting living functions, in order to make them not fluctuate

Thus,

3. Public health is the study of the factors and methods that support the preservation of the constancy of living functions outside the body<sup>66</sup>

This is the matrix of Chen's analysis of the structure of public health, his division of it into

“experimental” (試驗 *shiyān*) and “social” public health (社會衛生學 *shehui weishengxue*).

Experimental public health operates by the methods of natural science—biology, physics, chemistry, and so on—while social public health operates by means of the social sciences—sociology, economics, statistics, and so on. Public health is constituted around and at the intersection of the fields of application of both of these kinds of knowledge. Where energy lies below the threshold of the population, it belongs properly to the natural sciences; once it passes above this threshold, it falls under the jurisdiction of the social sciences. And public health is constituted by the systems of knowledge and intervention that are bolted together, as it were, by their relationship to that threshold. It is not defined or limited by any criterion that would be internal to any of the knowledges involved, nor by the contents of either the natural or the social, but by the network of connections that can be established between them by their being

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66 Chen, *Weishengxue yu weisheng xingzheng*, 1934: 8.

related together to the accumulation of life. The field of public health is in principle an open and unlimited set.

But this runs the danger of making public health work a hopelessly confused jumble of haphazard interventions (and indeed this is how it appeared to many who wished to systematize it). How is public health supposed actually to work? What determines the specificity of its activity? Here, then, is Chen's second demarcation:

The boundaries of public health being thus clear, we must explain the process of the extension of public health. It is a social process of moving from work in research departments (研究室 *yanjiushi*) and then moving out and being put into practice in actual locations, when experimenters have already clearly researched all the factors that protect health. When these measures are brought out into society, many difficulties are experienced. They are blocked and hindered at every step, and all the measures that have been developed in research departments are flouted by numerous problems, the most important of which are: 1. the complexity of social organization; 2. the irregularity of the level of development of humanity; and 3. the ceaseless transformations of time. Social hygienists must proceed from the basis of these three factors, to establish a point to place their feet, find the factors that impinge upon the effectiveness of their measures, fix up all the deficient points, and cause what has been determined by experiment to be marked and indicated, so that it is easier to put into effect.<sup>67</sup>

The respective domains of the natural and social sciences ought properly to be brought together in a synthesis that has nothing to do with the reduction of either into the other but with the establishment of a specific relation between them.<sup>68</sup> First, experimental hygiene:

1. It is based on science, and takes physics, chemistry, biology, and other sciences as its foundation
2. Its result is the determination of the marks and indications the concern the protection of the health of each individual person's life
3. Its content and character derives from the laboratory, and [by comparison to the correlate term below] is relatively unchanging and constant

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<sup>67</sup> *Ibid.*, 9.

<sup>68</sup> Popular articles on how to incorporate the latest scientific and hygienic discoveries into one's daily life were legion in the periodical press from the 1910s onward; see, to cite just a few examples, Yu Fengbin, "Ying'er baoyu fa 嬰兒保育法 (Methods of Raising Infants)," 1912; Ida Kahn, "Home Hygiene," 1916; Tang Erhe, "Ying'er baoyu fa 嬰兒保育法 (Methods of Raising Infants)," 1916; Jiaoyu weishenghui (Association for Educational Hygiene), "Ying'er weisheng fa 嬰孩衛生法 (Methods of Infant Hygiene) 1929; and Hu Xuanming 胡宣明, "Jiating kanhu bingren zhi yaojue 家庭看護病人之要訣 (Techniques for the Family Care of Patients)," 1929.

4. The starting point of its research is each individual in public society (公眾社會 *gongzhong shehui*); its center of gravity (中心 *zhongxin*) is the health, illness, or death of the individual

For social hygiene:

1. It too is based on science, and takes economics, statistics, and other social sciences as its foundation
2. Its result is the determination of the factors that contribute to the health of society
3. Its content and character constantly change with changes in social organization
4. The starting point of its research is the total system (體 *ti*) of society, or the average person in society (在社會中的平均人 *zai shehui zhong de pingjun ren*); its center of gravity lies in the health of the coordinated social system (協同社會全體 *xietong shehui quanti*); it is unconcerned with the life or death of any particular individual<sup>69</sup>

Experimental hygiene, using the tools of physics, chemistry, biology, and the other natural sciences, determines the methods of increasing the health of a particular individual. Social hygiene, on the other hand, on the basis of knowledges like statistics, economics, and sociology, studies the influences on health of the fact that people live in a “coordinated social system” constituted by their collective life. It proceeds by way of “the average person in society,” and strives to synthesize the principles that govern the relations between people's collective existence and their collective health. Through the coordination of these two domains and everything that is included in them (which is, in fact, everything), one gains a general definition of public health that is probably as accurate and succinct as any other: “Whatever contributes to the promotion (增進 *zengjin*) of the health of the individual and of society, and simultaneously eliminates (驅除 *quchu*) the elements and causes that are injurious to health.”<sup>70</sup> These are the positive and negative poles of the apparatus: to elicit whatever increases the efficiency of the transformation of energy into useful social lives, and to reduce the operation of whatever decreases that efficiency. We must note as well the disjuncture between the relative permanence

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69 Chen, *Weishengxue yu weisheng xingzheng*, 1934: 9–10.

70 *Ibid.*, 10.

of the natural and the correlate mutability of the social. That is, another disjuncture between temporalities, which it is the function of the coordination of the natural sciences and social sciences to render manageable.

The constitution of a population by putting diverse knowledges into relation around a particular point of transfer is clearly recognized by, among others, the sociologist Hu Jianmin 胡鑑民 (1896–1966), who in 1932 suggests another arrangement of knowledges (placing economics on the side of nature):

From the point of view of economists, a population is a natural phenomenon; from that of sociologists, it is a social phenomenon. So what kind of phenomenon is it really? Well, one aspect of a population makes it a biological thing, connected to problems of food supply, marriage, birth, heredity, and so on; another makes it a cultural thing, linked to phenomena of economics, politics, customs, war, and so on. Thus one side of a population faces nature and is subject to the control of natural law, and the other side faces culture and is subject to the control of human law ... This complexity in the phenomenon of a population is not contradictory, because a population is precisely an object in which natural forces and social forces are drawn or gathered together. Like the flowers and trees in a garden, their emergence, thriving, and growth is dependent on nature, but their value or cheapness, their survival or death—this depends on the controlling influence of the structure of the garden.<sup>71</sup>

So, if a population appears to confound the distinction between nature and society (which is, I think, a novel distinction in any case in a Chinese context), this is not due to a shortcoming in anyone's conceptualization of it, or to the fact that we just aren't clever enough to understand it properly. It is due to a real ambiguity in the object itself, the fact that is constituted in and by the movement between conceptual domains—nature, society—whose relations in turn it organizes. And if there are different scales of phenomena wrapped up into it, different dimensions along which it is inscribed into its environment, then there must be different scales at which the practices of public health will be articulated. And indeed there are.

Returning, then, to Chen Fangzhi: The expansion of public health is characterized by a

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71 Hu, "Renkou bianqian yu shehui bianqian 人口變遷與社會變遷 (Population Change and Social Change)," 1932: 75.

movement from the controlled environment of the laboratory to the messy and confused environment of society, where all the factors that can be isolated in the laboratory are jumbled up together. But then, the function of the laboratory is to allow this jumble to be disentangled, its elements clarified and their reciprocal organization understood. The movement from society with all of its confusion to the laboratory as a controlled space in which to produce and observe events is one of isolation, miniaturization, separation, and clarification. Then, the movement back from the laboratory to society can itself be made the object of laboratory-like study. It is not that the apparently intractable complexity of social life constitutes the outer limit of the efficacy of the laboratory; rather, precisely this complexity must itself be put through the machine of something like the laboratory. Herein lies the function of social science in its relation to physical science. It organizes social interventions into a ceaseless back and forth motion, where the scientific and the social refer constantly back to each other and are checked against each other, each recording and managing one aspect of the transcendental thing thus generated, the population. (This pertains both to the “discovery” and to the “verification” aspects of laboratory work.) So, the various medical and economic and social statistics offices (some of which I described in the previous chapter) would be the “laboratories” of “social public health.” The statistics office is (or should be) to the social what the laboratory is to the natural.

Public health, then, according to Chen, has *two* centers of gravitation (中心 *zhongxin*): the natural and the social. It is easy enough to resolve these two into one, which is the life of the population. Like any center of gravitation, its existence is a function only of the positions, trajectories, and masses that compose the system. It is a function of the existence of and relationships between *other* things, and exists only by virtue of their composition. It can be identified, located, and utilized in calculations, but it is not, for all that, actually anything. A center of gravitation is also the virtual point in a system through which gravity acts, which is

specifiable even if nothing actually exists there.

This is where the modern hospital finds its specificity: in its ability to introject all of this into a single spatio-temporal institutional matrix. Recall that “the” hospital, like “the” laboratory, designates both any particular hospital, insofar as it conforms to a certain organization, and to *the* hospital as a species of organization of space, knowledge, and activities in a determinate series of relations to other species. Thus, “the” hospital can be used as a matrix of evaluation with regard to “actually existing” hospitals, a way to measure their divergence from an ideal. The function of the, or a, fully-developed hospital research laboratory is, according to Tao Shanmin 陶善敏, “not just to discover the errors of technical clinical practice, but also to seek the causes of diseases appearing in abnormal conditions.”<sup>72</sup> It is to control the movement between the natural and the social by installing it *within* a controlled environment, the hospital. To turn big waves subject to all kinds of variables into small waves where the introduction of variables can be controlled, and then to attempt to roll the small waves back into the big waves, and to observe what happens. The structure of the modern hospital is such that one may at any time find the material for a research process. Here, the very contradictions that arise between laboratory results and clinical practices can, by a kind of reflexive gesture, become the material of future laboratory research. The system constituted by the coordination of laboratory work, clinical practice, and the statistical registration of the effects of these progressively comes to form an expanding feedback loop, which incorporates within itself more and more of the experiences generated by their very coordination. The laboratory's function expands from the simple confirmation or refutation of clinical phenomena to become a real engine for the production of knowledge, a producer of new knowledge, each expansion of which brings more of the messy social world into the systematization that the laboratory system

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72 Tao, “Yiyuan shiyanshi zhi xingzhi gongzuo ji guanlifa 醫院實驗室之性質工作及管理法 (The Nature of the Work of the Hospital Laboratory and Methods of Managing It),” 1933: 710.

expresses and generates. The apparatus of public health, so organized, works in reality toward what is already true “in theory,” the socialization of the production of life.

Much practical work went into the installation of the laboratory system within the hospital system. The ideal hospital with a fully equipped laboratory would encompass both clinical work—treating patients, diagnostics, and so on—and public health work—the organization of urban space and dynamics, the coordination and publication of results from across diverse research sites, statistical work, and so on.<sup>73</sup> The hospital would introject into itself, and thus provide a point of concentration for, both aspects of public health as they are defined by Chen Fangzhi: the natural (the laboratory) and the social (the statistics office). It would condense their reciprocal operations into a single hub. Then the relations between the hospital and the urban space around it can be made the object of both natural-scientific and social-scientific analyses. (Gulou Hospital in Nanjing—run by Chen—was intended to be exemplary in this respect: it was used as the site for a series of social-scientific studies in the 1930s, pertaining among other things to marriage and childbirth.<sup>74</sup>

The basic thrust of this whole effort is to create a true system of interconnected, mutually supportive institutions. Numerous writers contributed their thoughts and efforts to this endeavour. To name just a few: Wu Lien-teh, Arthur Stanley, Tao Shanmin, and Chen Fangzhi. An urban hospital system should be organized along the following lines: a large research and teaching hospital—a “combined hospital and health office,” as Arthur Stanley put it in 1913<sup>75</sup>—equipped with a full research laboratory (實驗室 *shiyanshi*) should be located in the center of

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73 An earlier call for the establishment of such a system can be found in Wu Lien-teh, “Foundations of Modern Hygiene in China,” 1916.

74 See, for instance, Jinling nüzi wenli xueyuan shehuixue xi 金陵女子文理學院社會學系 (Sociology Department of the Jinling Girls' College of Arts and Sciences), “Gulou yiyuan zhong 75 wei furen zhi diaocha 鼓樓醫院中 75 位婦人之調查 (A [Marriage] Survey of 75 Women at Gulou Hospital),” 1936.

75 Stanley, “The Sanitary Organization of China,” 1913: 5.

the city, in order to centralize the major functions for ease of control and organization as well as economy. Smaller hospitals should be distributed at more local levels into neighborhoods, equipped with smaller diagnostic laboratories (試驗室 *shiyanshi*).<sup>76</sup> The point of a public health laboratory is prevention of infectious disease, not clinical diagnostics. Thus, the best method is for a municipality to establish a lab in the centre of the city, for the centralized use of the smaller hospitals distributed around the city.<sup>77</sup> The total apparatus of public health, with the laboratory as its “brain,” should be characterized by this same dynamic: 1. the determination, through the miniaturization that the laboratory permits, of a reform that would be felicitous to the general health; 2. the distribution of that reform into the non-controlled, non-laboratory world; 3. the registration of the results of that distribution in statistical offices; and 4. the feeding of those results back into the laboratory to become the material for the next cycle of expanded research. One passes from the social to the natural through the laboratory, and then from the natural to the social through the statistical system, and then back again.

Chen Fangzhi is best known for the extensive parasitological studies that he organized: studies of the microorganisms and pests that, by living, suck energy away from human use, returning it to the non-human environment. (Just as usurers and beggars do with respect to the national economy, as I will show in the next chapter with regard to national economics. The widespread populist figuration of the “non-productive classes” as parasites is no specious metaphor, and it entered Chinese popular discourse in precisely this period. The action of the non-productive classes with respect to a national economic system is homologous to that of a parasite with respect to its host.) Of course, the energy does not disappear, according to the law of the conservation of energy. It just slips out of the social system and returns to the natural

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<sup>76</sup> The CFHS would try to do for the national health system what such a hospital does for a municipal health system: function as the central coordinating system. John B. Grant organized the Beijing First Health Station in 1925 according to this model.

<sup>77</sup> Tao, “Yiyuan shiyanshi zhi xingzhi gongzuo ji guanlifa,” 1933: 714–715.

system.<sup>78</sup> But given that these are parasites, it slips out of the social system insofar as it is encoded within the human organism, back to a natural system that operates *within* the body. Thus, the body is by no means “within” the social, but neither is it entirely within the natural. It is in between the two.

At the still relatively small scale of the immediate environment of a human body, the goal of establishing the environmental conditions in which life flourishes brings into view a whole series of fluctuations and circulations, or parameters (recall the discussion of the biometer in the last chapter). The circulation of air, for instance: its channels of entry into and escape from a space, its rates of dissipation, its dryness or humidity, its temperature, and so on.<sup>79</sup> Or lighting: the amount of reduction of light by different kinds of windows, the amount of reduction by how frequently they are washed, and so on.<sup>80</sup> Fluctuations in temperature, as well: the range of normal temperatures of a person at rest and the variability of people's relationships to heat, to variations of season and type of dwelling, the heat-retaining properties of different kinds and densities of soils, and so on, all centred on the bandwidth of calories within which the human

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78 See Chen Fangzhi, “Xuezhibing quanbu zhi lüeshuo 血蛭病全部之略說 (Some Comments on Blood-fluke Diseases),” 1926a–c and 1927a; *idem.*, “Xuezhibing zhi jixing pizhong 血蛭病之急性脾腫 (Acute Spleen Inflammation Due to Schistosomiasis),” 1927b; and *idem.*, “Xuezhibing zhi yanjiu 血蛭病之研究 (A Study of Blood-fluke Diseases),” 1929a–b. The Central Public Health Laboratory was the center for research in China on bacteriological and epidemiological work around parasite diseases, especially schistosomiasis, in the provinces of Jiangsu, Zhejiang, Anhui, and Fujian; on this, see the CPHL's Annual Reports for 1929 and 1930: Zhongyang weisheng shiyansuo, *Zhongyang weisheng shiyansuo diyi nian nianbao* 中央衛生試驗所第一年年報 (*First Annual Report of the Central Public Health Laboratory*) 1929 and *Zhongyang weisheng shiyansuo di'er nian nianbao* 中央衛生試驗所第二年年報 (*Second Annual Report of the Central Public Health Laboratory*), 1930. After 1949, Chen was transferred to the Central Public Health Research Institute (中央衛生研究院 *Zhongyang weisheng yanjiuyuan*), the Shanghai Municipal Epidemic Prevention Station (上海市衛生防疫站 *Shanghai shi weisheng fangyizhan*), and the Shanghai Municipal Parasitological Research Institute (上海市血吸蟲病防治研究所 *Shanghai shi xuexichong bing fangzhi yanjiusuo*). His studies formed important bases of knowledge for the anti-snail (schistosomiasis) campaigns of the early 1950s (Zhang, *Shanghai weisheng zhi*, 1998: 646). For more on these campaigns, see Miriam Gross, “Chasing Snails: Anti-Schistosomiasis Campaigns in the People's Republic of China,” 2010, and for a more general discussion of “patriotic hygiene movements” in the early PRC, see Ruth Rogaski, *Hygienic Modernity*, 2004: 285–300.

79 Chen, *Weishengxue yu weisheng xingzheng*, 1934: 237–243.

80 *Ibid.*, 246–248.

body is in the most salubrious condition.<sup>81</sup> To each of these flows and fluctuations corresponds a particular machinery: air-pressure indicators, thermostats, anamometers, photometers, calorimeters, biocalorimeters, and so on, all calibrated to this particular scale.

Moving to the somewhat larger scale of the city, still more kinds of circulations and fluctuations are discovered to form part of the same field, each with distinct patterns, rhythms, and vectors: economic circulations (most importantly, commodities, but also the people involved in moving them around), political or symbolic requirements (such as that of building a “modern-style” city center and monumental architecture), natural circulations and seasonal

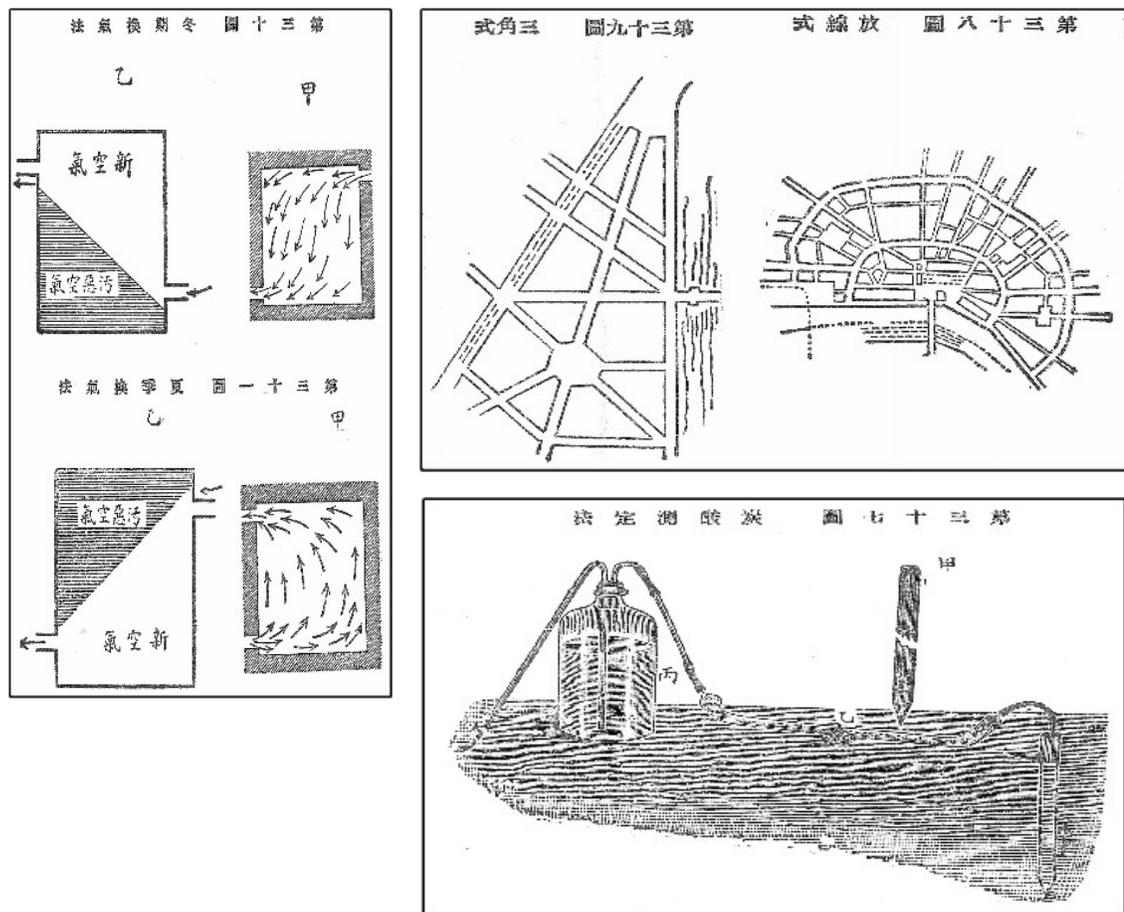


Figure 4.3 (Clockwise from top left): Methods of air circulation; triangular vs. radial street organization; instrument for measuring ground temperature (Source: Chen, *Weishengxue yu weisheng xingzheng*, 1934).

81 *Ibid.*, 256–264; 271–273.

changes, ritual or religious perambulations, and so on.<sup>82</sup> Urban planning from a sanitary perspective involves coordinating a series of not necessarily commensurate requirements and working with a series of givens. It involves correctly distributing housing, separating industrial, commercial, and residential areas, arranging streets so that some blockages are minimized and some flows are made continuous, while other blockages are strengthened and other flows prevented. (Here Chen discusses the relative merits of grid vs. triangular vs. radial street patterns.)<sup>83</sup>

Public health, then, certainly involves the control of space and scale. The spatial reorganizations that it brings about have in recent years been the subject of a number of studies, in keeping with what I think we can follow others in calling a general geographization of critical theory and history (the generally salutary “spatial turn” which ultimately derives from the work of Marxist geographers like Henri Lefebvre and David Harvey). But it also involves the control of *time* as the *other* dimension that constitutes life's conditions of existence. Or rather, the discovery of the variety of temporalities in which life operates. Just as the social or cultural aspects of public health have generally been emphasized over the technical aspects, the spatial dimension of public health has been emphasized over the temporal aspects. The resulting picture is necessarily incomplete. The fixing of the various scales at which life is inscribed in space proceeded alongside a similar specification of the ways in which it is inscribed in time.

The shift from a *milieu* determined by the presence of an exceptional event to one defined according to its normal state produces the possibility of epidemiology proper. With this, a new kind of temporality enters into the field of reflection. Here is how Chen describes the factors

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82 Efforts to remake Chinese cities according to the requirements of a capitalist economy and a modern society have been covered in recent works such as Michael Tsin, *Nation, Governance, and Modernity in China: Canton, 1900–1927*, 1999; Joseph W. Esherick, ed., *Remaking the Chinese City: Modernity and National Identity, 1900–1950*, 2000; and Kristin Stapleton, *Civilizing Chengdu: Chinese Urban Reform, 1895–1937*, 2000.

83 Chen, *Weishengxue yu weisheng xingzheng*, 1934: 272–274.

which relate to the duration and intensity of an outbreak of an infectious disease:<sup>84</sup> If you have a population with a uniform and complete susceptibility to a disease, the formula for its spread will be:

$$1 \dots n \dots n^2 \dots n^3 \dots n^4 \dots$$

So, if Patient-1 infects four people, the resulting series will be:

$$1 \dots 4 \dots 16 \dots 64 \dots 256 \dots$$

But very few populations have uniform susceptibilities to a disease. This might be the case with the first entry of a disease into a given territory, but generally there will be a certain percentage of the population who are immune. So there will be, as a first step, temporal variations in levels of immunity (免疫性 *mianyixing*). If  $a\%$  of a given population are susceptible to a disease— $a$  can be 100, but it rarely is—then the formula is altered to

$$1 \dots \frac{na}{100} \dots \left(\frac{na}{100}\right)^2 \dots \left(\frac{na}{100}\right)^3 \dots \left(\frac{na}{100}\right)^4$$

So, if  $n$  is 5 and  $a$  is 20, the series of numbers of infections will be

$$1 \dots 1 \dots 1 \dots 1 \dots 1 \dots$$

But if  $n$  is 5 and  $a$  is 80, the line given is very different:

$$1 \dots 4 \dots 16 \dots 64 \dots 256 \dots$$

Which is to say, exactly the same as if  $a$  was 4 and  $n$  was 100. Over the course of an outbreak, though, the number of people within a population who have not yet been infected gradually diminishes, so that  $n$  becomes gradually smaller, and when  $n$  reaches zero, the epidemic is over.

Let's say we have two places,  $X$  and  $Y$ .  $X$  has never experienced a given disease before, so that the people there are totally susceptible to it:  $a = 100$ , and  $n = 10$ . If we can reduce  $n$  by half across each period, our series is

$$1 \dots 10 \dots 50 \dots 125 \dots 156 \dots 96 \dots 29 \dots 4 \dots 0$$

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<sup>84</sup> *Ibid.*, 70–71.

If  $Y$ , on the other hand, has already experienced this disease, so that many people there are already immune and consequently  $a = 20$ , the series is

1.....2.....2.....0

The question is: What are the factors that contribute to the magnitudes of the values  $n$  and  $a$ ?

Obviously prior exposure is one factor, but there are others: “If conditions in society are unstable or if there is war or large-scale displacement,  $n$  will increase. When there is famine or large-scale undernourishment,  $a$  will increase. On the other hand, if methods of disinfection and isolation are implemented,  $n$  will be reduced, and where there is vaccination,  $a$  will be reduced.”<sup>85</sup>

So, we can add another temporality to our series: an iterative temporality or a temporality of dependent events, in which each period is affected by all the periods before it, and which is operative within the field of life at two scales: within each outbreak and across the series of outbreaks. This temporality forms a basis for the coordination and calibration of interventions in a very immediate way: determining where you are in a series or in a series of series determines which measures are appropriate. These interventions are not imposed on life from above and they do not approach it from the outside. They emerge from the inscription of knowledge into the very movement of life. This, I think, constitutes not just one or another new intervention, but much more importantly a new *kind of governing*, one which emerges from and develops in the field of governability that will be called life.

### THE NATURE–POPULATION–SOCIETY NEXUS

The problem of life in Republican China was constituted along at least the following dimensions: 1. the scalar dimension, running from the micro-scale of the cell and the bacterium

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<sup>85</sup> *Ibid.*, 71.

through the meso-scale of the human body to the macro-scale of the population and its environment; 2. the dimension of duration, from *le plus courte durée* of microbial reproductive cycles (relevant to the management of epidemics and the production of vaccines), through *le moyen durée* of a human lifetime (relevant because of the different “forces of mortality” statistically determined to be operative at different ages, and to act on populations differently according to their variable age structures),<sup>86</sup> to *le plus longue durée* of population dynamics and environmental change (relevant to long-term health planning). In addition, there are at least four different temporalities that we have to account for: 1. an “abstract” or absolute temporality, the marking of intervals along a line of pure duration; 2. a cyclic temporality, for instance in coordinating vaccine distribution, anti-fly and anti-mosquito campaigns, and education campaigns to rhythms set by the seasons; 3. an entropic temporality, that is, a structuration of time according to the model of decline and extinction, measured by the rate of loss of energy from the social system back to the natural system (which was especially prominent with regard to China's “excess infant mortality”); and finally, 4. an iterative temporality, in which each period presupposes the reality of all the periods before it. There is also a “modal” dimension, according to whether one is dealing with life *in potentia* or life *in actu*, and whether one encounters it in its latent, oscillating, or free forms. A perfectly real set of interventions corresponded to each of these determinations, and despite the incommensurabilities introduced by their simultaneous coexistence, they could all be related to each other by means of the term “life.”

The measures and techniques described in this chapter define a form of governing that operates in terms of the relations between organisms and environments, but between these two mutually constitutive categories there is nothing like a line or a boundary. “The” individual is *a*

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<sup>86</sup> I will return to this question of age structure in the next chapter.

scale at which interventions are organized, but it is not an ultimate unit or a terminus: it is as broken up as any other scale. The individual is not even the *central* scale, the one around which all the others are organized. Any line we may wish to draw between an organism and an environment is ultimately drawn in water. It is an artefact of the specific form of governing one is engaged in, and it disappears as soon as one shifts to another form of governing. When all of the interventions and machineries—which in any case are developed separately and which each have their own histories—that are gathered together under the sign of public health are articulated with each other, what we get is not the discovery of a new truth—“Ah! So *that's* what life is!”—but the formation of a new field of governability, in which, on the one hand, new series of elements are brought into relation, made immanent to one another, and placed on the agenda of government and, on the other hand, new effects are sought from the practice of governing.

It should be relatively easy at this point to see how this object, life, is virtual. Just as in virtual reality, it is not “out there”; it is given to experience by the operation of a specific apparatus. Life is the name we give to the set of phenomena generated by the operation of this apparatus. This allows us to clarify as well the sense in which life is “transcendental.” If someone says, “life is transcendental,” we would tend to interpret this as a claim that some life “as such” exists in the noumena, in a kind of ungraspable perfection, and that all of our knowledge of it is necessarily partial and limited by our perspective. Life would then be transcendental in the way that God is normally understood to be transcendental, or, say, the Kantian subject is similarly understood to be transcendental. But there is very different way to understand this, on the model of transcendental numbers, which are produced by operations performed on perfectly real and rational numbers, by ways of relating perfectly possible things so that the result is an impossible thing, one that truly defies our attempts to understand it in the

same way that we understand the things we used to produce it, like  $\pi$ , or  $e$ . That is, the notion of life is generated by the operations of the systems of knowledge and governing that are brought to bear on the management of a population.

Which, to conclude this chapter, allows us as well to understand a seemingly absurd but actually quite wonderful claim that Foucault makes in *The Order of Things*: “If biology was unknown [in the eighteenth century], there was a very simple reason for it: that life itself did not exist.”<sup>87</sup> That is, for biology to be constituted as a science, and for that science then to make its way to China, life has already to have been constituted as an object for that science, and this constitution of life as a natural-scientific object cannot have been the work of biology—since biology rests on it—but is instead the effect, among other things, of the political management of well-being.<sup>88</sup> This is the sense in which this chapter has argued that life began to be distributed into China in the early twentieth century, and has tried to determine some of sites in which that distribution could be tracked, as an element of a general transformation of governing there and elsewhere. The logic does not “underlie” the set of measures, techniques, and knowledges called public health; rather, it is what is produced by, what exists by virtue of, their actual historical constitution.

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87 Foucault, *The Order of Things*, 2002: 139.

88 There is a tendency, when speaking of the biopolitical, to add the word “itself” or “as such” after the word life, as though one was speaking of a form a power that reaches “right through” to some elemental foundation, that oversteps the bounds of the “properly” political to touch some prepolitical domain. For surely there can be life without politics, while there cannot be politics without life. This figuration should be avoided, I think, and not just because it imparts a specious air of seriousness to the discussion. Rather, one should stick to the seemingly absurd statement that there cannot be life without politics. This is not at all to suggest that “life itself” is somehow intrinsically political. Rather, that life is the effect of a certain historical transformation in the order of politics.

**“THE ECONOMIC VALUE OF CHINA’S  
RURAL POPULATION”**

THE IMMANENCE OF HEALTH AND WEALTH

I can now pick up a thread that I basically left off at the end of Chapter Three: the problem of managing a national economy. In that chapter, I argued that the population was the bearer, in the form of vitality, of abstract labour-power, *V*, and that this abstraction functioned as the general equivalent for a form of government whose object was to rationalize and maximize its production, even if it wasn't always directly present as such. I also argued that the population has for economic nationalism the same formal structure as a commodity, that it is comprised of both value—a given quantity of a general equivalent—and use-value—a specific set of real properties.<sup>1</sup> Then, in the previous chapter, I outlined how a new kind of governing, in the form of public health, was organized in China with reference to the constitution of a multi-scalar nexus of interaction rather than to the presence or absence of any particular object. I will now look at how this accumulation of life is related to accumulation “proper,” that is, what is usually understood as the specific and limited sphere of “the economy.” If the function of public health was to rationalize the production of labour-power, I will argue in this chapter that one of the central functions of the rural reconstruction movement was to rationalize its distribution relative to the other factors of national production: land and capital.<sup>2</sup>

1 It may be objected at this point: But the population is not (produced to be) sold. Two responses are possible to this. First, it *is* sold, and produced to be sold. This is exactly what the wage relation is, and what all the discussion of the relative productivity of Chinese workers concerns. Second, the determination that the population “ought not to be sold” can proceed according to two different understandings of the relation between law and saleability. It *could* be that commodities are one kind of thing and a population another, like coal is one kind of thing, and (ideally) public office is another. This would be like saying that it is permissible to sell apples but not to sell oranges. But what occurs here is rather more analogous to saying that it is permissible to sell *these* apples, but not *those* apples.

2 This differentiates my approach from previous studies, which have emphasized either the

The link between public health and the national economy, between the accumulation of life and the accumulation of capital, was anything but obscure to the people involved in these projects. In 1937, for instance, Liu Ruiheng, then Director-General of the National Health Administration, wrote:

I was told the other day that a certain provincial capital has a notoriously high mortality rate, and that this fact was discovered by the life insurance companies. The death rate among the policy-holders for a number of years remained persistently much higher than in any other large city in China, so much so that one after another of the insurance companies issued orders to discontinue accepting any more policies from that city! The insurance companies have no more interest in the city, and the authorities were not informed. Up until last year, when the National Health Administration assisted this province in the establishment of a modern health service, there had been no vital statistics of any sort in this city, and it was only by accident that I obtained this information from a foreign insurance man.<sup>3</sup>

This is one of the ways in which mortality rates are inscribed into an economic and developmental calculus. Probabilities of death being inordinately high, it is impossible for life

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philanthropic and cultural aspects of this movement, or its conservatism, or both. See, for instance, Guy S. Alitto, "Rural Reconstruction during the Nanking Decade: Confucian Collectivism in Shantung," 1976, and *The Last Confucian: Liang Shu-ming and the Chinese Dilemma of Modernity*, 1986; Charles W. Hayford, *To The People: James Yen and Village China*, 1990; on educational projects in the movement, see Kate Merkel-Hess, "Reading the Rural Modern: Literacy and Morality in Republican China," 2009. Taking a somewhat different approach, the recent work of Margherita Zanasi has analyzed attempts to construct a modern national economy while retaining the "essence" of "the Chinese rural," locating a Chinese modernity here. See Zanasi, "Far from the Treaty Ports: Fang Xianting and the Idea of Rural Modernity in 1930s China," 2004, and *Saving the Nation: Economic Modernity in Republican China*, 2006. See also, on this, Catherine Lynch, "The Country, the City, and Visions of Modernity in 1930s China," 2010. For a contemporary Chinese historian's attempts to cull lessons for the present from the experience of the movement, see Yu Heping, "Rural Transformation Patterns of the Campaign of Rural Reconstruction in Republican China," 2007. In any case, the fundamental issue has been a determination of a specifically Chinese modernity. The movement's conservatism has been read in basically two ways: either as a form of anti-modern reaction or as a way to retain a Confucian cultural tradition in new conditions. Either way, it is culturally "authentic." I will argue, by contrast, that the putatively Confucian rhetoric and terminology of the movement was essentially false (which is not to say consciously hypocritical), in the sense that it prepared the way for a radically new form of government. That is, an entirely non-Confucian kind of governing was installed under the cover of Confucian moralism. I think I am authorized to locate my analysis at the level of capitalism, rather than at the level of modernity, for a fairly simple reason: the term "modernity" (現代性 *xiandaixing*), or versions of it such as "modernization" (現代化 *xiandaihua*), never appear in contemporary texts, whereas the term "capitalism" (資本主義 *zibenzhuyi*) is completely pervasive.

- 3 Liu, 1937, cited in Liu, *Liu Ruiheng boshi yu Zhongguo yiyao ji weisheng shiye*, 1989. Given the dates, he is likely talking either about Nanchang or Changsha (China Neizhengbu, *Weisheng tongji*, 1938).

insurance companies to offer policies at prices affordable to the population whose probabilities they are. Only as public health does its work and as death rates come down does it become feasible for life insurance companies to offer their services. The role of insurance companies as centralizers, organizers, and investors of capital, turning the incentive to good health into an organ of the mobilization of capital, in the form of accumulated premiums, on the model of the Metropolitan Life Insurance Company in the United States, is well known. Louis I. Dublin (1882–1969), the MLIC's chief statistician for many years and President of the American Statistical Association in 1924, was a major participant in the general social and natural-scientific discussion of the population in this period.<sup>4</sup> For Dublin and many others, vital statistical work provided a series of entry points around which a system of leverage could (or should) be created, and a kind of *passageway between fields of knowledge and practice* (for instance, public health—ideally a state function—and insurance—a private sector function). At one level, it provided a description, a map, enabling the allocation of scarce governmental resources to maximum effect. At another, it provided a structure of probability, organized in

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4 Dublin was a key figure in the establishment of demography as a discipline in the United States. His *A Family of Thirty Million: The Story of the Metropolitan Life Insurance Company* (1943) is an extended summation of this connection between levels of health and possibilities of capital accumulation. For a sense of Dublin's extensive involvement in populationist debates at the time, see Dublin, "Review of E.M. East, *Mankind at the Crossroads*," 1924, "The Statistician and the Population Problem," 1925a, *Excesses of Birth Control*, 1925b, "Review of Warren S. Thompson, *Population Problems*," 1931, and *Population Problem and World Depression*, 1936a; for his work with the development of vital statistics in the US, see Dublin, "The Past and Future Development of Vital Statistics in the United States: V, The Present Registration System," 1926, *Length of Life: A Study of the Life Table*, 1936b, and *Twenty-five Years of Health Progress: A Study of the Mortality Experience Among the Industrial Policyholders of the Metropolitan Life Insurance Company*, 1937. For British developments, see Simon Szreter, *Health and Wealth: Studies in History and Policy*, 2005 (Dublin published a book with the same title in 1928: *Health and Wealth: A Study of the Economics of World Health*), and Timothy Alborn's recent *Regulated Lives: Life Insurance and British Society, 1800–1914*, 2009; for more on the development of the industry in the United States, see Vivianna Selizer, *Morals and Markets: The Development of Life Insurance in the United States*, 1979, and JoAnne Yates, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century*, 2005: 13–30. It is worth noting that most of the mathematics on which vital statistics depends was developed in the actuarial industry, well in advance of its incorporation into state machineries: probabilities of living to age  $x$  in population  $a$  or locality  $b$ , the influence of age of enrollment and the duration of compounding of interest, and so on.

such a way as to permit a maximally efficacious accumulation of capital, with all of the machineries of financial mobilization that attend it, and that went through such a dramatic development in this period.<sup>5</sup> They were to be calibrated to one another in a very specific way: as the mortality rate decreased due to public health accomplishments and as people lived longer on average, insurance premiums would come down, which would provide a greater incentive for subscription, which would in turn permit greater capital accumulation. It is not simply that vital dynamics were brought into definite relations with the state and its series of knowledges, then, but also that they became a kind of probabilistic lever of economic development. In this way, a state apparatus and a form of economic accumulation were conjoined *by means of the intermediary of the population and its regularities*.<sup>6</sup> But the public health–insurance nexus was not the only place where this conjunction occurred. It also occurred in the field of agricultural economics, whose medium of transmission into China was the rural reconstruction movement, which will be our topic in this chapter.

No discussion of the population problem in Republican China can reasonably avoid the issue of China's "vast rural population." Where the problem of the "excessiveness" of China's population survived, it was here, in relation to the agricultural sector (though not in a simple way, as we will see). Probably the central problem of national economics in Republican China was what to do about the rural sector: how to incorporate it into the national economy, that is, how to relate it well to the industrial, commercial, financial, and service sectors. To this problem, national economics responded with the deployment of another quantitative general equivalent (like vitality), *value*. The problem then becomes: How much value is there in the agricultural sector, how much ought there to be, and how is it composed and distributed? This is

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5 The entry of some of these into the field of populationist governing in China will come up again in this chapter.

6 This is clearly linked to the emergence of a new, "organized" form of capitalism in Germany and the US in the late nineteenth and early twentieth centuries, further developments of which will, as I will show below, be directly relevant to the question of rural economics in China in the 1920s and 1930s.

the general form of the problem. In the terms of the rural reconstruction movement (certainly in China, but it was global movement even if it was framed entirely in terms of national economies), the problem is: How can one establish the quantitative relationship between the rural population and the requirements of a developing national economy? This is the central question in relation to which the problem of “excessive rural population” (過量農村人口 *guoliang nongcun renkou*) or “rural surplus labour-power” (過剩農村勞動力 *guosheng nongcun laodongli*) is elaborated. How much of China's rural population is “surplus,” not to the means of subsistence—these were assumed to be sufficient, notwithstanding the common figuration of China in this period as “the land of famine”—but to the means of employment, and what can be done about this?

The formal mathematization of this problem came in the form of the Man-Work Unit (MWU), which designated the average amount of productive labour that an able-bodied man in a given country or “national accounting unit” could perform in ten hours. I will focus on this unit—its history and its function within the statistical activities of the rural reconstruction movement—not because it was in fact universally present in every discussion of the problem of rural surplus labour-power, but because it represents the formalization of the logic by which these discussions proceeded (rather like the formulae for race efficiency that I discussed in Chapter Two).

The first step in practically every project of rural reconstruction was to conduct a population survey or local census. Where I dealt with dynamics in Chapter Three, then, I will have to deal here with population statics: the determination of a set of real substantial properties of a given population at particular moments. When it comes to analyzing a population in its relations to agricultural development, the point is not at all to abstract pure events from a population's concrete determinations and to inscribe them into the element of time (as one does

in calculating birth and death rates), but to keep as close as possible to them, insofar as they are immediately (statically, or atemporally—I return to this in the next section) related to other factors, such as the productivity of the land, levels of technological development, and the mutual organization of production, circulation, and consumption. The central question here is that of the economic value of China's rural population.

The foundations for such an approach were laid elsewhere, and we are thus compelled again to take a detour away from China, to investigate how it could come to be said of a specifically rural population that it has an economic value. This development was made possible by the establishment of a network of connections between diverse historical threads, which we must reconstruct if we wish to understand the logic of the rural reconstruction movement in China. Where does the idea that a population can be in excess of the requirements of economic development, and can thus act as a fetter upon it, come from? How is it possible? Certainly there was no analogue to it in the framework of late imperial statecraft. To answer these questions, we have to go back to the early years of the capitalist economy and its proper knowledge, political economy.

#### QUANTITATIVE ECONOMICS, EQUILIBRIA, AND INDIFFERENCE

One of the roots of the problem of surplus labour-power lies in the complex exchange between natural philosophy and political economy in the first third of the nineteenth century, out of which it became possible to imagine both natural systems and social or economic systems as *equilibria*.<sup>7</sup> The particulars of this history need not detain us, and it has been extensively studied

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<sup>7</sup> It is not a question here of political-economic models being borrowed from natural science; as often as not, the influence went the other way. According to M. Norton Wise, William Thomson's (1824–1907) eminently natural scientific solution to the physical problem of work in 1845 relied on his use of experimental and conceptual resources from the steam engine, engineering, and the organization of industrial production. Wise argues that “in the first half of the nineteenth century the language and concepts of political economy played an important role in each of a variety of scientific subjects: natural philosophy, astronomy, geology, biology, and engineering. The prominence of political

by others. It must suffice to note here that the kind of economics with which we will be dealing in this chapter derives ultimately from a particular trajectory of enlightenment thought, a trajectory that is formalized in the work of Étienne de Condillac (1715–1780) as the study of natural and social systems as states of balance arising from the counterposition of opposed forces.<sup>8</sup> As far as economic systems were concerned, these forces were resolved into three kinds: land, labour, and capital. Precisely as productive *forces*, they could be subjected to a quantitative analysis, proceeding from their reduction to their common substance, value. Value, then, is the “stuff”—again, *prima materia* or 原料 *yuanliao* (original material)—of which land, labour, and capital are the manifestations. Such a statics refers to simultaneity, a composition of forces related mechanically with all the forces organized together, and is the absolute and necessary opposite of a dynamics whose element is time. Like two weights placed on either side of a fulcrum, or indeed like a system of logical deduction, any adjustment of one element automatically and, more importantly, instantaneously adjusts the entire composition. With this abstraction from temporality, economics makes the transition from the historical-generative (the various “historical schools”) to the rational-deductive (the marginalist schools). Now, the perfect order is given in a transtemporal ideality, unaffected and untouched by history while simultaneously directing it from the outside. (Anticipating the argument somewhat, I suggest here that within the global discourse of economic nationalism, the nation-as-subject comes to occupy this position. This is crucial, and I will return to it at the end of this chapter.)

The influence of Condillac on Léon Walras—whose most influential disciple was Vilfredo Pareto, whose most influential disciple in turn was Irving Fisher, all of whom appeared in

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economy in such diverse areas suggests a common understanding of the systems under investigation, an understanding at least that they were all economies” (“Work and Waste: Political Economy and Natural Philosophy in Nineteenth-Century Britain, I,” 1989a: 266). Thus, the basic conceptual model for a variety of nineteenth century sciences came, to a significant degree, *from political economy*.

8 See especially his *Traité des systèmes*, first published in 1771. Condillac was closely connected to the Physiocrats, whom I've treated earlier.

Chapter Two<sup>9</sup>—in his mathematical formalization of economic equilibrium is well established,<sup>10</sup> and from the combination of the marginalist, rational-deductive analyses of Pareto and the other marginalists with the historical and nationalist analyses of figures like Henry Carey and Friedrich List,<sup>11</sup> one obtains the basic framework of American political economy of the Gilded Age and Progressive Era: Richard T. Ely (1854–1943), Thomas Nixon Carver (1865–1961), E.R.A. Seligman (1861–1939), Henry C. Taylor (1873–1969), and so on—all of them taking the rational lessons of utility maximization and applying them to the “enterprise” of a nation developing in history. All of these figures participated directly or indirectly in the training of the economists who would go or return to China armed with the managerial techniques that arose from out of this conjunction.

We have, then, three productive forces (*produktivkräften* in German, *forces productives* in French, 生產力 *shengchanli* in Chinese),<sup>12</sup> which exist ideally in equilibrium, but for the operation of “disturbing elements.” In a static—that is, perfect—state, economies are equilibrating systems, at least in their abstract ideality. As Carver puts it in *The Present Economic Revolution in the United States* (1925)—which was translated into Chinese in 1928 by none other than Chen Changheng, who studied with Carver at Harvard from 1912–1916,<sup>13</sup> as 美國現今的經濟革命 *Meiguo xianjin de jingji geming*—“a balanced economic system is one in

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9 See above, p. 85.

10 Bruna Ingraio and Giorgio Israel's *The Invisible Hand: Economic Equilibrium in the History of Science*, 1990, provides a very good history of this trajectory in economic and scientific thought.

11 See above, p. 40, n. 83.

12 Just as these forces of production are identified theoretically, significant efforts are made to measure them, especially in comparative terms. See, for instance, Charles Dupin, *Forces productives et commerciales de la France*, 1827, and *Mesure de la richesse Française*, 1831, and Friedrich List, *Das nationale System der politischen Oekonomie*, 1844.

13 Before going to Harvard in 1912, Chen spent a year at the University of Michigan, where one of his fellow Chinese students was Liu Dajun, who trained for a number of years there with Henry C. Adams (1851–1921), one of the founders of American Institutionalism. Upon returning to China, Liu would maintain a long and close professional association with Chen, founding with him the Chinese Economic Association and the Chinese Statistical Association (of which he was the first President)—see above, p. 9, n. 15—and organizing and directing the Bureau of Statistics (統計局 *Tongjiju*) of the Legislative Yuan (立法院 *Lifayuan*) in 1928. We will hear more of Liu shortly.

which all factors of production are combined in such proportions as will yield the most satisfactory results, and yield them *automatically*.”<sup>14</sup>

Developments within the natural and social sciences are not sufficient, however, to explain how the problem of labour as such, or abstract labour, could make its historical appearance. To complete the explanation, one needs two more things: 1. the reorganization of production according to the “clockwork” temporality of machinic processes rather than the cyclical and periodic temporality of the agricultural cycle, and 2. the real historical dislocation (“abstraction”) of labour-power from the means of production. In short, one needs the historical emergence of industry and of the proletariat. That is, of capitalist production.<sup>15</sup>

It will seem counterintuitive to claim that the notion of labour as such is the product of a capitalist social formation, and has no meaning outside of it. In the section titled “The Method of Political Economy” in the *Grundrisse* (a series of notebooks written 1857–1858), Marx addresses exactly this problem.

Labour seems a quite simple category. The conception of labour in this general form—as labour as such—is also immeasurably old. Nevertheless, when it is economically conceived in this simplicity, 'labour' is as modern a category as are the relations which create this simple abstraction.<sup>16</sup>

In what Marx calls “the Monetary System”—that is, the analysis of wealth from Colbert in the sixteenth century to Cantillon and the Physiocrats in the eighteenth—wealth is conceived as money. Within this system there then arose “the commercial, or manufacture, system” (what we usually call Mercantilism), which identified the source of wealth in commercial and manufacturing activity, that is, not in an object but in a subjective activity. “In contrast to this [latter] system, that of the Physiocrats posits a certain kind of labour—agriculture—as the

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14 Carver, 1925: 233, emphasis added.

15 Approaching things not from the angle of the history of science, but from that of the history of political economy, we could also say the reverse: that the appearance of the proletariat is not sufficient to explain the category of abstract labour; certain developments within natural science are also needed.

16 Marx, *Grundrisse*, 1973: 103.

creator of wealth, and the object itself no longer appears in a monetary disguise, but as the product in general, as the general result of labour.”<sup>17</sup> Adam Smith, then—and herein lies his principal innovation, according to Marx—was the first to “throw out any limiting specification of wealth-creating activity.” Any productive process whatever, to the extent that it produced exchangeable values, was productive of wealth. Thus, the source of the productive activity and the nature of the produced good became a matter of *indifference*, and this indifference to any particular kind or manner of labour is the historical condition for the appearance of labour “as such.”

It might seem that all that had been achieved thereby was to discover the abstract expression for the simplest and most ancient relation in which human beings—in whatever form of society—play the role of producers. This is correct in one respect. Not in another. Indifference towards any specific kind of labour presupposes a very developed totality of real kinds of labour, of which no single one is any longer predominant ... Indifference towards specific labours corresponds to a form of society in which individuals can with ease transfer from one labour to another, and where the specific kind is a matter of chance for them, hence of indifference. Not only the category, labour, but labour in reality has here become the means of creating wealth in general, has ceased to be organically linked with particular individuals in any specific form.<sup>18</sup>

That is, the existence of “labour as such” as a category of economic analysis presupposes the subjective detachment of the labourer from the process of production, which is just what Marx calls “proletarianization.” The real existence of “labour” (that is, labourers) detached from the means of production, which can be detached and reattached to a productive process according to need, rather than on the basis of its possession of this or that real and concrete means of production (which would necessarily make its relation to its work *not* a matter of indifference)—that is, of a proletariat—is the real historical condition for there being such an economic category as “labour pure and simple.”<sup>19</sup> Value itself, then, as a strictly quantitative relation,

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17 *Ibid.*, 103. It is in virtue of this conceptual innovation that Marx, in *Theories of Surplus Value*, calls the Physiocrats “the true fathers of political economy,” and places them at the head of the tradition of “analysis of capital” as opposed to “analysis of wealth” (1861–63: Chapter II).

18 Marx, *Grundrisse*, 1973: 104.

19 *Ibid.*, 105.

exists only insofar as any qualitative features of forms of labour or of use-values have become a matter of complete indifference, and this in turn is the condition for the development of quantitative economics, whose essential correlate and tool is not use-values and the satisfactions they produce, but (exchange-)value. Value automatically makes concrete forms of labour literally in-different.

It follows from this that, although the historical precondition for the appearance of abstract labour-power is the emergence of the proletariat, the transcendentalization of labour as a fundamental economic category alongside land and capital means that labour-power is not just to be found in the “actual” proletariat as a positive social group, but is immanent in any economic process as such. To have abstract labour, the proletariat must exist, but once abstract labour exists, it encompasses *all* labour, simply as force, whether performed by proletarians or not.

So, at the conceptual and historical beginning of modern economics (that is, of the trajectory that will eventually take us through the rural reconstruction movement in China), we find the determination of labour *as such*, as a productive force alongside land and capital, the material basis of which is (recalling Helmholtz from Chapter Three) the population and its labour-power. If we are dealing with pure forces, there must be nothing of any of the other forces in any one of them. They are pure rational functions, and any specification or mutual implication must be eliminated so that their reciprocal functionality can be revealed. Labour, then, can no longer be determined by its relation to any particular means of production (land or capital). The material basis of this force cannot, therefore, be either land or capital; it is the population, necessarily, then, conceived as itself an abstract ideality, albeit one that will have entirely real effects. But this labour-power will be projected into a function of the population as a specific composition of material things.

The detachment of capital and labour from their association with particular social groups and their reascription as fundamental categories which tend automatically, with only the removal of obstacles, to equilibrium, is, in fact, the basic gesture of bourgeois political economy, and it is common to both the various “historical schools” of the mid- to late nineteenth century and the marginalist schools beginning in the 1870s. The social division between capitalists and labourers is obliterated in favour of a functional division between capital and labour as agencies of an enterprise, as mutually constitutive elements of the productive process as such. Labour has no effect without capital, and capital has no body without labour. It is as impossible, indeed nonsensical, to do away with one or the other as it would be to try to do away with matter while retaining energy, and vice versa. Capital and labour are logically entailed simply by there being a productive process at all. As William S. Jevons says, “there must always, indeed, be a little capital in possession, even though it be only the last meal in the stomach, before we can produce more.”<sup>20</sup> Capital, then, is simply the form in which products exist such that they may contribute to the production of more products. There is *no qualitative difference* between “the last meal in the stomach” and, say, a \$30 billion hedge fund. They are functionally and formally identical, only quantitatively different.

We can now see an additional dimension to the importance ascribed by Liu Ruiheng to the issue of insurance. Not only could the distribution of public health serve to make possible the development of a particularly efficacious machinery of financial mobilization, but a generalized ownership of insurance would also serve to disassemble the social division between classes, by making everybody into owners of capital.<sup>21</sup> It would act both directly and indirectly to nullify class antagonism, by nullifying the difference between labour and capital, or more precisely, by

<sup>20</sup> Jevons, *Political Economy*, 1888: 28. Recall that this text was translated into Chinese in 1897 as part of Liang Qichao's compilation 西政叢書 *Xizheng congshu* (*Collectanea on Western Governance*); see above, p. 87.

<sup>21</sup> See, in this connection, Louis I. Dublin's relatively early contribution to L.K. Frankel and M.M. Dawson's *Workingmen's Insurance in Europe*, 1910.

introjecting it into each person. It would effect a practical realization of the idea that capital and labour were not, in fact, social classes, but reciprocally necessary aspects of a common enterprise, in this case, “the nation pulling together for mutual prosperity.”<sup>22</sup> Such a social division as is represented by class antagonism is, according to this view, an accidental and inessential product of mistakes in the historical evolution of the present economic system, which was precisely not “too” capitalist but, on the contrary, not nearly capitalist enough. Carver analyses exactly this phenomenon in *The Present Economic Revolution in the United States*, locating it at one of the poles of that revolution (the other being a rapid convergence toward a state of balance in the allocation of the factors of production): the disassembly of the social classes by the spread of such institutions as labor banks, savings and loan associations, marketing and consumer cooperatives, and life insurance companies, all of which function collectively to make capitalists (property owners) of everybody, “since the owners of these insurance policies [and shares and deposits] are really the owners of the property in which insurance funds are invested.”<sup>23</sup> If different agents happened to occupy the positions of capital and labour in one branch of production (say, industry), and if the same agent occupied both in another (say, agriculture), this would not change the basic functional relationship between them in the least. Indeed, the latter was preferable, for reasons which will become clear shortly, and, according to many observers, such was in any case the tendency of the economic system.<sup>24</sup>

The reduction of all the phenomenal variety presented by the triad of land, labour, and capital to their value, and thus the creation of the possibility of relating them to each other

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22 This practical disavowal of class struggle is an essential nationalist strategy. For a useful analysis of this Nationalist strategy in China in the 1920s and 1930s, see John A. Fitzgerald, *Awakening China: Politics, Culture, and Class in the Nationalist Revolution*, 1996.

23 Carver, *The Present Economic Revolution in the United States*, 1925: 93. Of course, we know what happened to this system, beginning in 1929, but Carver and Chen couldn't have known what was coming. Though perhaps they could have.

24 This is probably the origin of the discourse of the middle class as guarantor of social stability, but without studying the matter further, I won't make a claim either way.

mathematically, was the condition for the widely-noted statisticalization of economics in this period, the tendency it displayed to rely ever more heavily on quantitative analysis, and thus, despite its apparent “subjective” and anti-statist turn, on large-scale and state-centered machineries of knowledge production.<sup>25</sup> This phenomenon appeared to those subjected to it not as an historical and tactical reinscription of expertise in systems of governmental knowledge, but as progress toward perfect scientificity. As Pareto says:

In keeping with the general propensity of natural sciences to progress towards a higher degree of perfection, Political Economy has for some years now been showing a tendency to replace the qualitative method used in its beginnings with the quantitative one ... In fact, one could not say that economists have until now neglected the quantitative principle, in the same way ancient [i.e., pre-Newtonian] physics never totally did; but its use by economists was always limited, whereas now it is increasing and becoming prevalent.<sup>26</sup>

If economics wishes to attain to the status of physics, then—*the science par excellence*—it must attain to a purely quantitative view: it must work from the equivalent of what in Newtonian physics is *prima materia*, the undifferentiated substance which exists only in variable quantities. “Modern economics,” then, for Pareto—by which he means “pure” or neoclassical economics as the development of the trajectory that begins with Smith, to whom the Marginalists traced their own lineage—begins with the reduction of concrete, dissimilar particularities to quantities of abstract units of pleasure and pain (the *prima materia* of physics), subject only to the equally abstract forces of increase or decrease. This is the shift from the empirical-inductive method to the rational-deductive method, that is, to a transcendental, axiomatic schematization. It is how economics “gains the rigour of rational mechanics” and becomes a “positive science.”<sup>27</sup> In his *Considerations on the Fundamental Principles of Pure Political Economy*, written in 1892–93, Pareto argues that the attainment of a strictly quantitative consideration of labour is the precondition of “pure” political economy, defined precisely as the study of rational behavior,

<sup>25</sup> Recall the discussion of Jevons in Chapter Two, p. 84–85.

<sup>26</sup> Pareto, *Considerations on the Fundamental Principles of Pure Political Economy*, 2007 (1892–93): 1.

<sup>27</sup> Pareto, *Manual of Political Economy*, 1906, cited in Renato Cirillo, *The Economics of Vilfredo Pareto*, 1979: 93.

that is, that form of behavior which tends to give a maximum of economic utility, or what he calls “ophelimity.” Pure economics, then, as we saw in Chapter Two, is the science of the calibration of factors of production such that the greatest possible abstract utility is generated, and utility is itself (this comes straight from Bentham) a pure quantity of pleasure which it is possible to add to or subtract from other quantities of pleasure (pain being just “negative pleasure,” just as with physical forces, where “deceleration” is actually negative acceleration).

It is essential to note, again, that this economic operation is not hitched to any particular agent, say, the entrepreneur as a *person*. The fundamental “bearer” of this logic is *the enterprise*, and this can be anything: an individual, a family, a corporation, or a nation. The meaning of “economic phenomena”—that set of phenomena which economics claims as its domain—has changed fundamentally here: it is no longer the general social processes of production, circulation, consumption, and so on; it is any phenomenon that is inscribed into a process of rationalization. “Economy” is not a sphere of reality, but a kind of subjective activity, with the precise status of the subject engaged in this activity being of secondary importance.

A very particular understanding of capitalism arises from this. Rather than an historical system, capitalism is the name given to the eternal equilibrium that is revealed with only the removal of the impediments to its realization. It is, to cite Francis Edgeworth (1845–1926) citing Adam Smith, “the obvious and simple system of natural liberty” which “establishes itself” on the condition that “all systems, either of preference or of restraint, [are] completely taken away.”<sup>28</sup> As Carver puts it:

Strictly speaking, capitalism is not a system at all. It is merely a fact that grows out of the suppression of violence. Wherever violence is repressed, capital comes automatically into existence. Where violence is repressed, the man who has made the thing, or found it before any one else has gained possession of it, cannot be dispossessed without his consent. No government can repress violence without automatically creating property as a

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<sup>28</sup> Edgeworth, “Equal Pay to Men and Women for Equal Work,” 1922: 435.

result.<sup>29</sup>

To this conception of capitalism corresponds a conception of the nature and proper agenda of government. The fundamental project of a capitalist governmentality, then, its basic or organizing principle, is the creation of the conditions which permit the maximally efficient accumulation of wealth. This in turn means the removal of any “disturbing elements” or “derangements” preventing the attainment of the ideal state, all of which is equal to the “liberation” of productive forces by their being placed in the proper distribution. National economic development is essentially a problem of sectoral redistribution, and since this redistribution is imagined to be a matter of revealing a natural order, the interventions that it entails appear as precisely *non-interventions*, as an end to intervention. Carver, again:

Nation-building ... in so far as it is the work of the statesman, consists in creating conditions that will enable as many people as possible to live and to live as well as possible. The real work, of course, must be done by individuals, each in his own productive or useful occupation. All that the statesman can do is to furnish such leadership and to help in the framing of such laws and in the building of such institutions as will encourage all the workers to do their best work, both with hand and brain.<sup>30</sup>

To this end, three and only three primary purposes of government exist: 1. the repression of violence; 2. the suppression of fraud; and 3. the enforcement of contracts. All other purposes of government are derivative of these. The *sole* legitimate function of governing (“statesmanship,” in Carver's words) is to ensure and increase economy, but this single purpose authorizes *total* and *universal* intervention into every aspect of social life, simply because capitalist government involves approximating the nation and the population to a state of perfect efficiency. “The more nearly we approach that condition, where everybody is trying to win prosperity by making himself useful, the greater the prosperity of the whole country will be.”<sup>31</sup>

Thus, while the function of government is to enable every economic agent to be useful

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29 Carver, *The Present Economic Revolution in the United States*, 1925: 211.

30 Carver, *Elements of Rural Economics*, 1924: 3.

31 *Ibid.*, 9.

(and thereby to “liberate” them), by the same token and in exactly the same measure, it is to *prohibit* any economic agent from *not* being useful. (Resistance to economic intervention, then, can only appear as willful perversity, and this is how a form of government which intends simply to reveal a natural order is authorized to engage in the most ruthless and brutalizing interventions. We will return to this at the end.) “Bad statesmanship” consists in not giving or in withdrawing adequate motives for productive activity (excessive taxation, arbitrary or confusing exactions, “red tape,” and so on), or in providing motives for unproductive activity (subsidies, welfare, and so on). Good statesmanship consists in nothing other than revealing the immanent order, the equilibrium, in which “*every* unit of labour and capital is employed in the occupation for which it is best adapted. The exact amount of labor and capital needed is at hand and there is no more to be had.”<sup>32</sup>

This simultaneous narrowing and universalizing of the agenda of government finds an analogue in Ma Yinchu's *Chinese Economic Reform* (中國經濟改造 *Zhongguo jingji gaizao*, 1935), which I looked at in another connection in Chapter Three. There, Ma writes that “the sole and proper object of economics is *value*” (價值 *jiazhi*).<sup>33</sup> Value, then, produces the possibility both of radically narrowing the focus of reformist thought and practice (since they have now to deal with only one central term) and of universalizing their reach (since *everything* is reduced to a common substance, distributed only in different amounts). Since the economic as such is constituted by the set of things which have been brought under the value relation, it is no longer a specific and delimited social sphere, but a mode of relating things.

It is thus incorrect to say that national and neoclassical economics are necessarily opposed. The logic of rational maximization was common to them both in the first half of the twentieth

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32 Coleman, “Labor as a Measure of Exchange Value,” 1899: 545, emphasis added. Recall here, too, Jevons' definition of economics as “the science of *Capitalization*,” cited in Chapter Two.

33 Ma, *Zhongguo jingji gaizao*, 1935: 435.

century. The difference between them lay in the nature of the subject, or enterprise, imputed as the bearer of the managerial principle in relation to a given economic instrumentation. For the neoclassical economist, it was the individual enterprise—usually, or at least for a time, or at an ideological level, a “person,” because of certain psychological commitments—in a field of competition the other occupants of which are other enterprises; for the nationalist economist, the subject was the nation in relation to other nations. In this light, their “essential antagonism” appears to be rather secondary, a retrospective illusion.<sup>34</sup>

The axioms of this system, then, are as follows.

1. Any productive process whatever is comprised of the set of relations and exchanges established between land (natural resources), labour, and capital<sup>35</sup>
2. The maximum possible production occurs when these three factors are in a state of dynamic equilibrium
3. “Economy” is the recursive and tendential approximation to this equilibrium
4. The set of these agencies constitutes an *organon*, an instrument or “complex organization”<sup>36</sup> whose function is the maximum production of wealth

If axiom 4 is correct, then what are land, labour, and capital, taken together, the organs *of*? What is the organism? It can be anything, so long as it is an enterprise, at the head of which stands *management*. When we are dealing with the general social process of production, it is, precisely,

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34 A similar argument is made in Yuval L. Yonay, *The Struggle Over the Soul of Economics: Institutional and Neoclassical Economists in America Between the Wars*, 1998.

35 W.A.P. Martin's *Policies for Enriching the Country* (富國策 *Fuguo ce*), a translation of *Manual of Political Economy* by Henry Fawcett (1833–1884), originally published in 1863—see above, p. 87, n. 66—is perhaps the first statement in China of this principle, in the section “The Three Requirements of Producing Wealth”: “Wealth (財 *cai*) originates in passing the productivity of the land (地力 *dili*) through human labour (人工 *rengong*) to become (成於 *cheng yu*) capital (資本 *ziben*).” (This is also the earliest use that I've seen of 資本 *ziben* for “capital” in its modern sense.) It received a tremendous impetus from Liang Qichao's publication of a Chinese translation of Jevons' *Political Economy* in 1897. By the 1930s, again, it was practically ubiquitous; see, to cite just a few examples, Chen Changheng, “Woguo tudi yu renkou wenti zhi chubu bijiao yanjiu ji guomin jingji jianshe zhi zhengce shangque” 我國土地與人口問題之初步研究及國民經濟建設之政策商榷 (A Preliminary Study of China's Land and Population Problem and a Discussion of Policies for the Reconstruction of the People's Economy), 1935: 24; Jin Lunhai, *Zhongguo nongcun jingji yanjiu* 中國農村經濟研究 (*A Study of China's Rural Economy*), 1937: 325; and Chen Da, *Renkou wenti* 人口問題 (*The Problem of Population*), 1935.

36 Jevons, *Political Economy*, 1888: 39.

*the population*, as the subject of labour, the highest practical level of organization of which is, apparently, the *nation*. Thus we have a kind of negative fifth axiom: the nature of the enterprise of which the organ is the instrument is undetermined. The problem of the mutual calibration of capital and labour is, as I will show in the next section, an operator of the inscription of the population (as their bearer) into the problem of the national economy, just as, in turn, the population is an operator of the installation of the capital-labour schema into the center of Chinese governmentality.

### RURAL ECONOMICS AND THE MAN-WORK UNIT

This form of economic calculation, one of the conditions of possibility of which is the detachment of production from the agricultural cycle and its conversion to an industrial time-system, was then turned back upon the agricultural sector with the development of agrarian or rural economics, beginning in Germany in the final third of the nineteenth century, but really taking off in the United States in the late nineteenth and early twentieth centuries. Under the general sign of “national prosperity” or “the national welfare,” American Gilded Age and Progressive Era political economists oriented their research activities around the problem of harmonizing the overall operations of a multi-sectoral national economy and society.<sup>37</sup> The most fundamental sectoral division was between the industrial or urban sector and the agricultural or rural sector, and to this division corresponded the general disciplinary organization of economic and sociological knowledge: industrial economics and urban sociology on the one hand, and agricultural economics and rural sociology on the other.<sup>38</sup> This knowledge was elaborated in

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37 It is worth noting how Marx continues the passage cited above, from the *Grundrisse*: “Such a state of affairs is at its most developed in the most modern form of existence of bourgeois society—in the United States. Here, then, for the first time, the point of departure of modern economics, namely the abstraction of the category 'labour', 'labour as such,' labour pure and simple, becomes true in practice” (1973: 105).

38 The role of German–American exchange and interaction in the development of this organization cannot be overstated, and American political economy could be understood as a replication, on a

basically two contexts: on the one hand, a considerably expanding university system, and on the other, the organization of a whole series of new linkages between industrial and agricultural producers, activists organized under the broad banner of “social reform” (the Country Life and Industrial Betterment movements, for instance), scientific researchers, social scientists, economic and political theorists, and the state. Out of these convergences emerged the discipline of rural economics, as a way of theorizing and systematizing the deployment of all the institutions and knowledges that were emerging for the improvement of farm technology, of farm organization and management, and of the relations between the agricultural and other sectors.<sup>39</sup> In exactly this period—the first decade of the twentieth century—appropriations to the US Department of Agriculture skyrocketed, making it probably the largest research institution in the world; government support increased for the development of agricultural science and for the training and distribution of experts, demonstration and extension projects, and a national network of agricultural colleges; the American Farm Management Association was founded in 1910 under the leadership of Richard T. Ely (it changed its name to the American Farm Economic Association in 1919);<sup>40</sup> and university programs in rural and agrarian economics were first developed. These included the Harvard program instituted in 1906 by none other than Thomas Carver; the Department of Agricultural Economics at the University of Wisconsin–Madison founded in 1909 by Henry C. Taylor, a close collaborator of Carver's and the first

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much expanded scale, of the governmental and administrative techniques developed in Germany out of its national-economy building project in the last third of the nineteenth century, specifically as a way to compete against the financial and colonial power of Britain. In the interests of space, I can only point to this phenomenon, but the reader should be aware that a whole complex and important history is occluded here.

39 On the relations between rural economics and the agricultural sector in the US in this period, see Sally H. Clarke, *Regulation and the Revolution in United States Farm Productivity*, 1994: 22–49; for a more general picture of “agricultural Taylorism,” see Niek Koning, *The Failure of Agricultural Capitalism: Agrarian Politics in the United Kingdom, Germany, the Netherlands, and the United States, 1846–1919*, 1994: 113–153.

40 Henry C. Taylor and W.J. Spillman, “The Development of the American Farm Economic Association,” 1922: 95, 98.

organizer of the USDA's Bureau of Agricultural Economics; and the Department of Agricultural Economics at Cornell University in 1907 (where John Lossing Buck, whom I will discuss at length presently, attained his MSc in 1925), the first Chair of which was George F. Warren (1874–1938), author of the first textbook of the discipline, *Farm Management* (1913) and, like Carver, a marginalist.

The problem then arose of applying a logic formalized on the model of industry to the rather messier world of agriculture, where the social relations and temporalities of production were recognizably different than they are in a factory setting. In a factory, after all, which to a far greater extent than a farm could be built up where before there had been nothing, and which had been designed from the start with economy in mind, and to produce only one commodity, or a single kind of commodity, the number of elements that had to be calculated was necessarily limited. In an agricultural sector, on the other hand, being built up out of a preexisting system of peasant production, the number of elements was practically unlimited. One simply couldn't function without some way of reducing the phenomenal variety of the rural world to a manageable set of variables. In US agriculture in this period (as in most of the world), one generally did not find *an* owner of capital employing labourers, but a multitude of owners who were, in most cases, along with their families, their own sources of labour. Two further research problems then arose: first, the “condition” or “state” of the agricultural population, and second, the scale of production in the agricultural sector.<sup>41</sup> But the population is not at any given point

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41 Theodore Schultz (1902–1998), about whom we will have more to say shortly, provides the clearest definition of efficiency in regard to the agricultural sector's relations with the national economy: “In farm management [the term 'efficiency'] may be used to determine, for instance, how to produce the most *profit* on a *farm* with the assets [that is, land, labour(-power), and capital] at the disposal of the farmer and with the prices of inputs and outputs given. The combination of resources that would achieve this goal would, under given conditions, represent 'maximum efficiency.' Still another formulation, the one underlying this paper, has as its goal the task of determining how to produce (achieve) the largest *social product* in *the economy* as a whole given the existing cost and utility patterns. When all resources in the economy are allocated so that no further gain can be achieved by an additional transfer of a factor or product from one use to another use, 'maximum economic efficiency' is achieved. This would represent the *ideal*, the general equilibrium of economic analysis.”

composed of quantitatively equal units, either in the amount of work different parts of it could do or in the amount of wages they required and means of subsistence they consumed.

Conversion ratios were accordingly developed to reduce a population to Man-Equivalents (ME)—defined as “equal to one year of full employment for one worker” (300 productive man-days divided by the actual days worked)—and Man-Work Units (MWU)—defined as “the average amount of work accomplished by one man in ten hours.”<sup>42</sup>

In his introduction to the *Fifteenth Census of the United States, Census of Agriculture (1930)*, “Types of Farming in the United States” (1933), Foster F. Elliott—at the time the US Bureau of the Census' Chief Statistician—writes that the method previously used to determine “the relative importance of different enterprises on an area basis [acreage, basically] does not adequately take into consideration the varying degrees of intensity in production of different enterprises. A common denominator is needed to which all the different enterprises may be reduced and which will measure more adequately the relative importance of each.” The answer to this problem had been provided in 1919 by Irving Gilman Davis, out of his studies on classifying farms in Connecticut.<sup>43</sup> He devised a method for reducing areas (acres, in this case)

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Schultz, “How Efficient is American Agriculture?”, 1947: 646, emphases in original. Since the “unit” here is the national economy as a whole, labour equals national population.

42 Dadisman, et al., “Report of the Committee on Terminology,” 1919: 77. One notes that this is a properly industrial norm of labour-time: 10 hours/day, 6 days/week, for 50 weeks/year. Of course, the seasonal schedule of farm labour entails that no farmer actually worked this much, which means that the problem for rural economics is *not* to alleviate the “ceaseless toil” of agricultural labour, but exactly the opposite: that farmers don't work *enough*.

43 Davis was Chair of the Department of Economics at Connecticut State College from 1919 until his death in 1939, specializing in land utilization and the development of cooperatives (the centrality of which to the development of rural reformism I will explore in more detail below). In 1937, while he was a member of the Advisory Committee of the Social Science Research Council, Davis organized a research committee on the problems facing the disadvantaged sectors of the rural population, noting in his announcement of this project that “[t]his group of population is to a large extent the seed bed for the American people in that fertility rates of 1930 were between 150 to 175 per cent of reproduction as contrasted with 75 per cent for the large cities, 95 per cent for the towns, and 125 per cent for the commercialized farmers” (Davis, “Population Research,” 1937: 836). On the committee established for the purpose of conducting this research was the aforementioned Theodore Schultz, who had attained his PhD in Agricultural Economics from the University of Wisconsin–Madison in 1930 and who was at the time at the Iowa State College. He went to the University of Chicago in 1943, and after Gary Becker came there in 1955, the two worked closely together on the development

of different crops, head-counts of the various kinds of livestock, days of labour, cords of wood cut, and so on, to a *Productive Man-Work Unit basis*, by using a series of conversion factors representing average labour inputs per acre (Man-Labour Requirements), per head of livestock, and so on. The term was recommended for general use by the Committee on Terminology of the aforementioned American Farm Economic Association in 1919.<sup>44</sup> Thus, he could make total Man-Work Units into a measure of the size of an agricultural enterprise and, by extension, of a national agricultural sector. This also makes it possible to reduce total labour-power and labour requirements into a quantitative relation, by their common relation to the productive “Man.” The amount of labour required at a given level of production, in MWU,<sup>45</sup> can be related to the amount of labour-power present, in ME.<sup>46</sup>

This amounts to an abstract mechanics of (a) national economy. The determination of the scale of the maladjustment of the distribution of labour-power to the needs of capital (that is, of the population to the nascent capitalist economy) is made through, and made possible by, a calculus of equivalents that stamp the multitudinous, aleatory, and confused phenomena of the rural economy with a universal form. One eventually has only two factors, which correspond exactly to the two research problems noted above:<sup>47</sup> the rural population, reduced to ME, and the labour requirements of the agricultural sector, in MWU. One can then discover, mathematically,

of Human Capital Theory, which is a development of the problem of living capital that we discussed in Chapter Three. The general form of the problem was carried forward as well into “manpower” or labour economics in the 1960s and 1970s.

44 Dadisman, et al., “Report of the Committee on Terminology,” 1919: 77.

45 Ducoff and Hagood, in their post-war study of the US labour market, *Labor Force Definition and Management*, specify further that it “represents an approximation to the labor time input and work capacity of the average farm operator who is under 65 years of age and does not work off the farm in excess of 100 days per year” (1947: 15) Theodore Schultz continues: “This estimate was developed to allow for the regional differences in time input, physical capacity, and skills of the labor force in agriculture” (Schultz, “How Efficient is American Agriculture?”, 1947: 649). Thus, it is an average that can pertain to any scale: local, regional, national, or even global. Even though problems of statistical knowledge production make this last scale impracticable, there is no reason in principle why it couldn't be discovered.

46 The Productive Man-Work Unit (PMWU) is still in use in farm management and development economics, except that it is now comprised of *eight* hours of average adult-male labour.

47 See above, p. 207.

what one may have already expected: an excess of labour-power in relation to the possibilities of employing it. And since the population is adjoined to its labour-power like the two sides of a coin, one thereby gets “surplus population.” All of this stands behind the development of rural economics and the rural reconstruction movement in China, to which I now turn.

### THE BUCK SURVEY AND CHINA'S RURAL SURPLUS LABOUR-POWER

John Lossing Buck came to China as an “agricultural missionary” in 1916, and in 1920 took a position as Professor of Agricultural Economics at the University of Nanking (Nanjing), at the time a missionary college. Under his direction, the Department of Agricultural Economics, Farm Management and Rural Sociology at that university conducted a major survey of Chinese farm economy, for which data was collected between April 1921 and September 1925. The results of the study were published in the United States in 1930 as *Chinese Farm Economy: A Study of 2866 Farms in Seventeen Localities and Seven Provinces in China*. The existence and value of the survey were known among those interested in farm economics in the US well before its official publication, and a much larger land utilization survey was initially suggested in 1927 at a meeting of the Institute of Pacific Relations by Oliver E. Baker (1883–1949), who had trained at the University of Wisconsin–Madison under Richard T. Ely and Henry C. Taylor, and who had come to the USDA Bureau of Agricultural Economics (again, organized by Taylor) in 1922, where he was in 1927 Senior Agricultural Economist.<sup>48</sup> The idea for the larger survey was both

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48 Buck, *Land Utilization in China*, 1937: 1. The Bureau's name was changed to the Division of Agricultural Economics in 1927. Baker occupies an important place in the development of conservationism in the United States, whose links both to national-economy making and eugenics are profound (on the eugenics connection, see again Stern, *Eugenic Nation*, 2005; see also Chapter Two, p. 86). The movement arose, as with so much else, in the first decade of the twentieth century, during the presidencies of Theodore Roosevelt and William H. Taft. (Recall that Irving Fisher's *National Vitality: Its Wastes and Conservation* was written in 1909 as Volume III of the Report of the National Conservation Commission, organized by President Roosevelt.) In 1936, Baker was one of the editors of *Our National Resources and Their Conservation*, Chapter XXII of which is “The Conservation of Man” by Ellsworth Huntington, whose *The Character of Races*, 1925, was a constant point of reference for Chinese anthropologists in the Republican period (Parkins, et al., *Our National*

to ascertain the present state of the agricultural sector of the Chinese economy and to establish, if only methodologically, its composition according to a statistical basis that would make it internationally comparable. If the “agrarian question” was to be properly understood, some uniform statistical basis had to be established—exactly like the function of the ICCD in public health.<sup>49</sup> The results of this larger survey were published in 1937 as *Land Utilization in China: A Study of 16,786 Farms in 168 Localities, and 38,256 Farm Families in Twenty-two Provinces in China, 1929–1933*. The methodologies for the two studies were essentially the same, just elaborated on a grander scale in the case of the second.

Buck adopted the methodological tools of the ME and the MWU in his effort to assess the condition of Chinese farm economy, its levels of efficiency and the degree to which it was dramatically “overcapitalized” in terms of labour-power: “The amount of man labor in China is practically unlimited and one of the great problems is the discovery of enough productive work to keep this vast human army profitably employed.”<sup>50</sup> This would quickly become a basic trope of the rural reconstruction movement, which marks its distance from the late imperial logic of governing, in which such a notion is nonsense in the strictest possible sense. The essential question is: How much labour is actually needed for present levels of production? So, how is the calculation made? First, from Buck's glossary:

*Man equivalent* measures the number of workers in terms of the equivalent of one person doing the work for a period of twelve months. The term in this study was used not only to

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*Resources and Their Conservation*, 1936). He was also co-author, in 1930, with Corrado Gini (inventor of the Gini Coefficient of income inequality), Shiroshi Nasu, and Robert Kuczynski (author of *Colonial Population*, 1937), of *Population*, 1930, an attempt to summarize the present state of global knowledge with respect to demography. For more on Baker, see Edward A. Cocchiola, “The Life and Thought of Oliver E. Baker,” 1975.

<sup>49</sup> Warren S. Thompson, whom we encountered in Chapter Three in connection with the Jiangyin vital survey, was also involved in the tabulation and theorization of the population data. As Director of the Scripps Foundation for Research in Population Problems, Thompson came to the Department of Agricultural Economics at the University of Nanking from October 1934 to April 1935, working with the survey and teaching a course on population problems (Buck, *Land Utilization in China*, 1937: xv).

<sup>50</sup> Buck, *Land Utilization*, 1937: 289.

apply to farm work but also to subsidiary work.

In order, then, properly to distribute the Man-Equivalences devoted to different types of work, it was necessary to allocate portions of a Man-Equivalent according to the proportions of time devoted to each. Thus,

If a person works only six months on the farm but does no other work he [*sic*] is considered as giving a full year to farm work. If a person has subsidiary work, farm work and idle time, the man-equivalent is divided between subsidiary work and farm work in proportion to the time occupied on each. For example, a man doing farm work six months of the year, subsidiary work four months and who is idle two months is computed as six-tenths of a man-equivalent for farm work and four tenths for subsidiary work. It is assumed that his idle time is supported by his two occupations in proportion to their respective lengths of time. Therefore, 7.2 months may be allocated to farm work and 4.8 months to subsidiary work.

But not everybody who worked on the farms were adult men. Some account had to be taken of the farm work of women and children, and conversion ratios were used to transform this labour into that of an adult man, as follows:

In the case of farm women the time spent in purely domestic work *is not counted at all* and the months of farm or subsidiary work are multiplied by 0.8, while the months of farm children's labor are multiplied by 0.5. The months of hired labor are added to the man-equivalent of family labor and the man-equivalent is found by dividing the total months by twelve. Man-equivalent per farm always refers to farm work only.<sup>51</sup>

Ideally (with certain crucial conditions being taken into account, such as differences in levels of technology, that is, productivity), this would put Chinese agriculture onto the same terrain as that of any other country.

How does this work in an actual study of the rural sector in China? For the purpose of explication, we can extract from Buck's study the data for the "Yangtze Rice-Wheat Region" (see Figure 5.1), which was not only the most productive agricultural area in China but also the most extensively and comprehensively studied and intervened in. It was the area in which the University of Nanking was situated, and the location of a practically endless series of surveys,

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<sup>51</sup> *Ibid.*, 475, emphasis added.

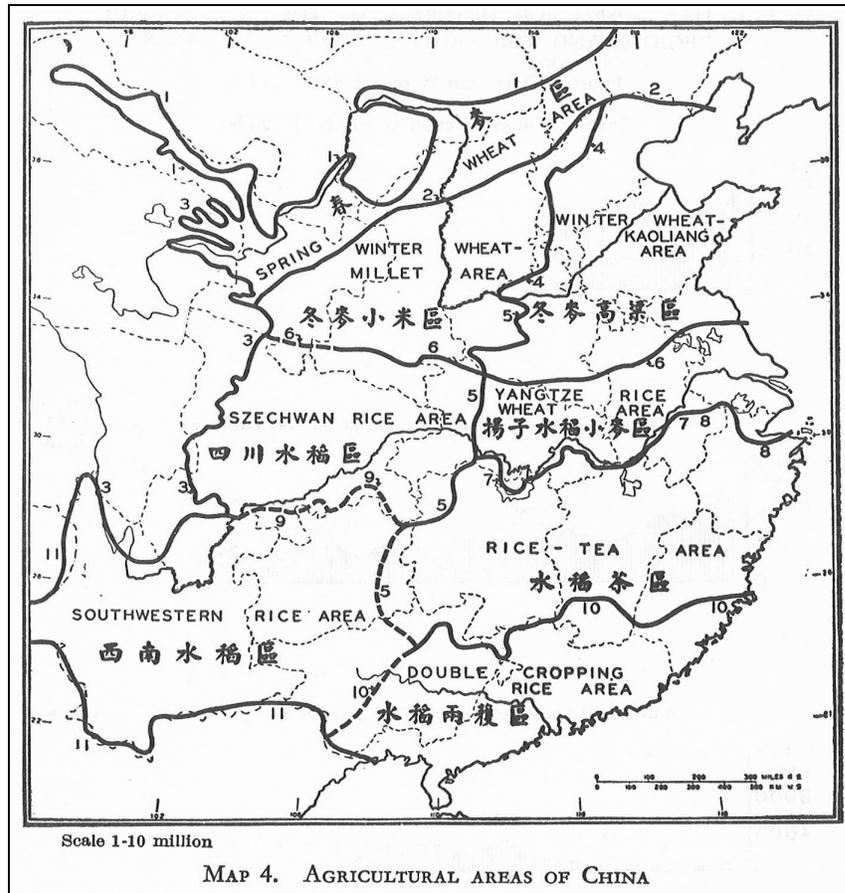


Figure 5.1 (Source: Buck, *Land Utilization*, 1937: 27).

studies, and reform projects. It was also the most infrastructurally developed region of China in terms of transport (and had been for some time), with markets being more accessible here than in any other region, due to presence of the Huai and Yangzi rivers, an extensive network of canals built over many centuries, and several railroads.<sup>52</sup> All that one needs to do to make the calculations manageable is to take the *percentage* of farms in each size category to represent the *number* of farms. Thus, one has an imaginary agricultural sector comprising exactly 100 farms. All of the percentages and ratios of the much larger real agricultural sector can thus be retained for the purposes of calculation. One can assume further that these 100 farms are growing crops in the average ratios of crops for the region (shortening our list to the five largest crops by percentage). As far as basic data on population and farm structure goes, then, one gets:

<sup>52</sup> *Ibid.*, 68.

Farm size	Small	Medium	Med-Large	Large	Very Large	Total
% area in productive use	90.1	91.8	93.5	93.2	94.3	
Average farm area (acres)	1.38	2.82	5.39	6.45	12.06	
% of farms	25	40	19	10	6	100
Persons/household	4.3	5.4	6.9	8.3	11.1	
Total population	107.5	216	131.1	83	66.6	604.2
Total crop area (acres)	31.08	107.22	93.98	60.11	68.24	360.63
ME/farm-size category	35	76	51.3	33	27.6	222.9
ME/farm	1.4	1.9	2.7	3.3	4.6	2.2

Table 5.1: Basic farm and population data, Yangtze Rice-Wheat Area (Source: Buck, *Land Utilization*, 1937).<sup>53</sup>

One can then assume that one crop per year is planted, in the average proportions, which we take to be (again, for simplicity) 70% for rice, 15% for wheat, and 5% each for tea, tobacco, and mulberry. The MLRs for each were calculated from survey data. For the total crop area of 360.63 acres, then:

Crop	Acres	MLR/Acre	Total MLR
Rice	252.44	76	19,185.52
Wheat	54.09	32	1,731.02
Tea	18.03	126	2,271.97
Tobacco	18.03	68	1,226.14
Mulberry	18.03	196	3,534.17
	360.63		27,948.83
$222.9 \text{ ME} \times 300 \text{ MWU} = 66,870.00$			
$\text{MWU:MLR} = 1:0.42$			

Table 5.2: Total Man-Labour Requirements, Yangtze Rice-Wheat Area (Source: Buck, *Land Utilization*, 1937).

So, in our 100 farms there are 222.9 ME in total, for an average of 2.2 ME/farm, and 1 ME = 300 days of average labour, for a total labour-power of 66,870 MWU, of which 27,949 is actually expended in agricultural labour, for a ratio of labour-power to labour of 1:0.42. Put

<sup>53</sup> Survey data such as this in Republican China was notoriously *inaccurate*, a fact that is endlessly annoying to social scientists and economic historians, but which is totally beside the point for present purposes. As with the race efficiency equations, the data can be refined as one likes—the numbers themselves can be anything—without this changing the form of calculation in the least, and it's that form that concerns us here. Similar concerns about accuracy existed with regard to land, of course: the ridiculous diversity of measures, the lack of a standardized unit of area, withheld information about holdings, confused titles, scattered holdings, and so on. Again, a problem for economic historians, not for us. If it should turn out that there were 400 people, or 800, or fifty acres of cultivated land or 500, the quantitative nature of the logic would be exactly the same.

another way: If one divides the MLR/year (27,948.83 MWU) into the number of possible average days of labour (300), one gets 93.16, which stands in the same relation to the total ME (222.9) as our last calculation: 1:0.42. Out of a possible 300 days of average labour for each ME, then, agriculture absorbs only 125.39 average days, which is the same ratio again.

Which is to say: agricultural production absorbs 42% of possible labour, leaving fully 58% as surplus, which amounts to same thing whether 42% of the rural population is engaged full-time in agriculture or 100% of the rural population is engaged in agriculture 42% of the time, or any ratio in between. According to Buck, then, “[w]hen one considers that out of the total number of days in the year only this small amount of productive work is done, it becomes apparent that there are the equivalent of several idle months each year for each farm operator and each family farm laborer.”<sup>54</sup> 58% of the actually present labour-power in the agricultural sector could be withdrawn from it, with absolutely no harm coming to total agricultural output.<sup>55</sup> For North China—the “Winter Wheat–Kaoliang Area” on Buck's map—the problem was equally serious, according to a report of the North China Industrial Service Union, founded by John Bernard (J.B.) Tayler (1878–1951) in Beijing with the intention of promoting the development of rural industry.

In North China, the smallness of the farms and the nature of the farming ... combine with the long hard winters to render agriculture a part-time industry. The farming community, except where subsidiary industries exist, has five or six months of idle time. A

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<sup>54</sup> Buck, *Chinese Farm Economy*, 1930: 231.

<sup>55</sup> After World War II, this surplus would be further refined into “accessible” and “inaccessible” components, the former comprising that portion of the surplus which is immediately available to be transferred to other sectors (basically, landless peasants), and the latter comprising what could be made available on the condition of significant agrarian reform, such as the consolidation of holdings that would make it economical to introduce labour-saving innovations (those tenant cultivators and owner-operators presently operating on “non-economic” holdings, an “economic unit” being defined as a holding of sufficient size to employ a farm family fully—that is, a unit in which the MLR is equal to the labour-power of the ME). On this, see Prafulla Sanghvi, *Surplus Manpower in Agriculture and Economic Development, with Special Reference to India*, 1969, Part I: “The Concept and Measurement of Surplus Manpower in Agriculture,” 1–106, which also provides a useful bibliographic source for tracking the global dissemination of these calculations in the post-World War II period.

conservative guess would put the underemployment of those members of the farming families of the nation between the ages of 15 and 54 as equivalent to the whole time employment of about 55,000,000 people.<sup>56</sup>

The whole thrust of rural reformism centers on what to do about this surplus: “China's farm power problem, then, is one of more efficiently using the huge human labor supply,”<sup>57</sup> since most of it is in excess of requirements at current levels of production.

We can also use these numbers to calculate the ratio of total population to ME, which will enable the calculation of how closely the demographic structure of a family fits its economic role in production. It fits better (though in no case well) as farm-size rises (Figure 5.3).

Ratio of Persons in the Household to ME/farm:	
Small	0.33
Medium	0.35
Medium-large	0.39
Large	0.4
Very large	0.41
Ratio of total population to total ME:	
222.9/604.2	0.37

Table 5.3: Ratio of population to ME by farm size, Yangtze Rice-Wheat Area (Source: Buck, *Land Utilization*, 1937).

Thus, the disequilibrium between population and the possibilities of production is most serious in the small and medium farm-size categories, and, as we will see, it was getting worse, due to the observed tendency in the region's rural sector toward shrinkage and parcellization of holdings. According to a survey of Jiaying 嘉興 county in Zhejiang province, the average number of people who worked in agriculture totalled only 44.48% of the population. The percentage got lower as the size of farm operations shrank. According to Xue Muqiao 薛暮橋 (1904–2005), then, analyzing this survey: “in small and medium-size operations, more than half of the population (including the elderly, the infirm, and children) are excluded from agricultural work simply by the size of the family operation. Supposing that half of this half of

<sup>56</sup> Cited in H.D. Fong, “Rural Industries in China,” 1933: 65.

<sup>57</sup> Buck, *Land Utilization*, 1937: 310.

the population is unable to work on account of age or infirmity, this [still] leaves 25% of the population who could work, but for whom no work exists.”<sup>58</sup> A closer approximation to equilibrium would be achieved by transferring a portion of the population presently existing in the smaller farm-size categories to the larger categories, where the utilization of labour is more efficient in any case, in terms of output/ME. On farms in the large size-group, one ME accomplished 2.5 times as much work as on the small farms, and their production of grain-equivalent (see immediately below) was 3.5 times as great.<sup>59</sup>

The ME is also used in a series of other calculations, each of which is intended to reveal sites of possible economization. For instance, the problem of total agricultural production. To quantify this, one needs another general equivalent, which is taken to be the value of grain. First, all the various products must be reduced to a grain-equivalent.<sup>60</sup> Then, the total grain-equivalent may be divided by total Man-Equivalents to attain the GE/ME, which, for the Yangtze Rice-Wheat Area, was 1,357 kg, or, per capita, 483 kg (for a ratio of 1:0.38—roughly the same ratio as population/ME). Something like the correlate opposite term of the ME on the consumption

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58 Xue, *Zhongguo nongcun jingji changshi* 中國農村經濟常識 (*A Primer on China's Rural Economy*), 1937: 122. At the time of conducting the research for this book, Xue worked in the Chinese Rural Economics Research Association (中國農村經濟研究會 *Zhongguo nongcun jingji yanjiuyuan*, better known as the Rural Studies Institute) in Shanghai, which had been established in 1933 by Chen Hansheng (Chen Hansheng 陳翰笙, 1897–2004) and Sun Yefang 孫冶方 (1908–1983), among others, during which time he also joined the Communist Party. It shouldn't surprise us to find concepts derived from neoclassical economics in the work of a figure within the Communist Party. One cannot expect that any difference we may be able to identify between neoclassical (say, bourgeois) economics and Marxist economics will map neatly onto the political question of party affiliation. (The work of Alexander Chayanov, 1888–1937, in the Soviet Union is a similar phenomenon.) As I will show in the Conclusion, four decades later he would be instrumental in the reentry of capitalist techniques of governing into China after the Maoist period.

59 Buck, *Land Utilization*, 1937: 287.

60 The method is as follows:

1. Group products into: food grains, tubers and roots, legumes and oil seeds, dried vegetables, fresh vegetables, dried fruits, fresh fruits, and miscellaneous
2. 1 kg tubers and roots = 0.16 kg grain, in terms of food value
3. 1 kg oil seeds and legumes = 1.16 kg grain
4. All other products are converted by price data:  $x$ -price/kg vs.  $y$ -price/kg of the most commonly consumed grain
5. Grain-equivalence of fruits is obtained by multiplying total kg by price, then dividing the total value by the price of the most commonly consumed grain (Buck, *Land Utilization*, 1937: 280).

side appears in connection with the problem of nutrition, out of which arose further studies: of the amount of food required by a population if it is to maintain normal levels of health and productivity, of the food system, and so on.<sup>61</sup> In his *Materials on the Chinese Rural Economy* (中國農村經濟資料 *Zhongguo nongcun jingji ziliao*, 1933)—a sizable compilation of data from a number of scattered local studies—Feng Hefa 馮和法 (1910–1997) notes:

The unit of analysis in previous studies of levels of livelihood has been the family (家 *jia*) or the household (家庭 *jiating*). But the total population, age distribution, and sex distribution of each family and household is different, a fact which has often given rise to considerable difficulties. The unit of analysis used by many researchers today has changed from the “person” (人 *ren*) to the “adult” (成人 *chengren*), and finally to the “adult male unit” (成年男子單位 *chengnian nanzi danwei*). With this unit, it is possible to estimate total food consumption. Because the inventor of this unit was W.O. Atwater, it is called the Atwater Unit.<sup>62</sup>

This is a unit of consumption that correlates exactly to the ME as a unit of production. The following conversion ratios are given, by which it is possible to reduce any actual population to adult male units:<sup>63</sup>

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61 Nutritional science in Republican China, especially Guangdong province, is the subject of Seung-Joon Lee's valuable studies, “Taste in Numbers: Science and the Food Problem in Republican Guangzhou, 1927–1937,” 2010, and Part II (“Saving the Nation from Famine”) of his recent book, *Gourmets in the Land of Famine: The Culture and Politics of Rice in Modern Canton*, 2011.

62 Feng, *Zhongguo nongcun jingji ziliao*, 1933: 38. Picking up on the regrettably brief allusion above to the history of German–American interaction in the development not just of national economics but of agricultural reformism (which is really a subsidiary of the former): Wilbur Olin Atwater was an agricultural chemist and, later, specialist in human nutrition and metabolism who received his PhD from Yale University's Sheffield Scientific School in 1869, whereupon he went to Germany to work in the agricultural science laboratory established by Justus Liebig and headed at the time by Liebig's disciple, Carl Voit. While in Germany, he toured the developing network of agricultural experiment stations, and on his return to the United States directed the first such station established in the United States, at Wesleyan University in Connecticut (recall the location of I.G. Davis' work), from 1875 to 1877, well in advance of the Hatch Act of 1888, which made provision for federal funding for a station in each state. On Atwater's life, see Kenneth J. Carpenter, “The Life and Times of W.O. Atwater (1844–1907),” 1994; on German–American connections in agricultural science in the mid-nineteenth century, see Margaret Rossiter, *The Emergence of Agricultural Science: Justus Liebig and the Americans, 1840–1880*, 1974.

63 In 1919, Raymond Pearl—whom we can't seem to shake off—wrote in “The Relative Contribution of the Staple Commodities to the National Food Consumption” that “[i]n reducing consumption data to a per capita basis it would obviously be foolish to take the actual total population as a base, for the reason that the amount of food consumed changes with the age of the individual, particularly in early life. On account of this fact the usual practice in computations of this kind is to reduce, not to a per capita basis, but to an adult man basis. In doing this a fractional factor is used to multiply the number

Age	Male	Female
Under 2 歲 <i>sui</i>	0.3	0.3
2–5 <i>sui</i>	0.4	0.4
6–9 <i>sui</i>	0.5	0.5
10–11 <i>sui</i>	0.6	0.6
12 <i>sui</i>	0.7	0.6
13–14 <i>sui</i>	0.8	0.7
15–16 <i>sui</i>	0.9	0.8
Over 16 <i>sui</i>	1.0	0.8

Table 5.4: “Adult Male Unit” conversion ratios (Source: Feng, *Zhongguo nongcun jingji ziliao*, 1933: 38).

The same conversion rate, ultimately, for adult men and women as in the MWU. The obliteration of all qualitative distinctions between sizes of farm, population categories, and products is the condition of their being relatable to each other in terms of their respective divergences from equilibrium.<sup>64</sup> The mechanism of this is the value of the population in relation to the possibilities of production under given conditions.<sup>65</sup>

Agricultural production proper, however, is clearly not the only economic activity engaged in by rural people. According to Buck's survey data, it constituted 83% of all labour expended, for a ratio of 1:0.2. Non-agricultural work, then, absorbed another 8,724 MWU, for a total of 33,673 MWU expended in all forms of work. This still left a surplus of 50%. But one of the fundamental developments that occurs with the integration of an agricultural economy into a capital-dominated economy is the “agriculturalization” of the peasantry, its gradual

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of individuals of certain lower ages [and genders, obviously], the magnitude of the factor being proportional to the relation which the nutritional intake of the individual at the younger age bears to that of an average adult man” (1919: 216). Using the “man-value factors” of 0.50 for children 0–5 years of age, 0.77 for children 6–13 years of age, 1.00 for males 14–18 years of age, 0.83 for females 14–18 years of age, 1.00 for males, 19–100, and 0.83 for females, 19–100, Pearl generates a US population in man-equivalents of 87,724,000, relative to a total “real” population of 103,238,000 (according to a US Bureau of the Census estimate).

64 Interestingly, this precise gesture is one that Mao Zedong, in his own early investigations of rural society (for instance, the famous “Report on an Investigation of the Peasant Movement in Hunan,” 1927), *never* makes. For him, the distinctions between the sizes of farm are absolute, *qualitative* differences. Which is to say, they rest on a division of *classes*, which, as I showed above, do not exist for neoclassical economics.

65 On one level, this possibility of speaking of an economic value of the rural population of China was basically the fault line along which the famous conflict between Mao and Ma Yinchu broke out in 1957; see above, p. 129–130.

transformation from a set of more or less self-sufficient economic units into the workforce of a national agricultural sector.<sup>66</sup> That is, a greater and greater portion of the total work performed comes to be devoted to specifically agricultural production. This takes place either “positively,” through the expansion of agricultural production, or “negatively,” through the collapse of other rural economic activities. The collapse of rural industries in China, and all the factors contributing to it, was in fact one of the central problems of national economics in this period. The importing of more cheaply produced, higher quality manufactured goods from industrialized countries (on the favourable terms, moreover, assured by the artificially low tariffs set under the various treaties China had signed since the mid-nineteenth century, which denied to Chinese economic nationalists one of the principal policy instruments developed by economic nationalists in Germany and the United States to resist the commercial power of England) destroyed the markets for the products of rural manufacturing: peasants could not sell their products at any price, so they stopped making them. This only exacerbated the problem of surplus labour-power, in the absence of possibilities for expanding agricultural production, the reasons for which I will explore in the next section.

The tendency, then—and this has far more to do with the formation of a capitalist economy than with any particularity of the Chinese situation—is for *less and less* rural labour-power to be devoted to non-agricultural activities, and for more and more of it to be devoted to the production of the food exports (either destined for the domestic urban market or for other countries, which amounts to the same thing as far as rural producers are concerned) which will gain for these producers the cash income increasingly needed for payment of taxes, the purchase of the household articles that are no longer being produced domestically or locally, or for the payment of interest to creditors, which thereby brings them into the monetized economy, which

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66 See Karl Kautsky, *The Agrarian Question*, 1899 (1988), and especially, in that edition, Hamza Alavi and Teodor Shanin's “Introduction,” 1988: xi–xxxix.

is to say, the economy proper.

This tendency could be met in a variety of ways. “Other things being equal, if conditions permit a choice between crops, a good farm management policy would be to grow the crops requiring more labor since the farm family is not fully employed and since such crops usually give a correspondingly higher income.”<sup>67</sup> Alternatively, if the rural was overlapping more and more fully with the agricultural, then the labour-power (population) not needed in that sector could, ideally, move out of it into the industrial or urban sector. But with such a “vast” rural population, and with the transition occurring at such an accelerated rate and under such disadvantageous conditions, and further, with opportunities for the development of domestic urban industries stymied in any case by the economic impact of imperialism, this was not a realistic option in China. (Or in Russia, or in India or Central America, or in any number of other cases. In fact, the circumstance in which changes in the agricultural sector produce in a very short period a growing “surplus” of labour-power which outstrips the capacity of the development of urban industries to absorb it is one of the basic triggers for the deployment of Malthusianism as a naturalizing argument in relation to this phenomenon.)<sup>68</sup>

The problem of rural surplus labour-power—which is, after all, the basic problem of this chapter—constituted a basic angle of attack when the rural reconstruction movement was launched in earnest in the early 1930s. By no means was the surplus a given or constant national quantity which could be approached directly as a single thing. It was a complex function of a number of natural, economic, and social variables that could be approached at any scale, from

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67 Buck, *Land Utilization*, 1937: 303.

68 Essentially the same thing happened, for instance, in Central America in the 1950s. That is, in addition to being a set of ideas that exist, as it were, atemporally, Malthusianism, in its real historical existence, is also a set of discursive techniques and arguments that corresponds to certain well-defined events in the historical development of the capitalist world-economy. For a broader history of this connection, see Eric B. Ross, *The Malthus Factor: Population, Poverty, and Politics in Capitalist Development*, 1998. For a useful study of the discourse in post-World War II India, see Mohan Rao, *From Population Control to Reproductive Health: Malthusian Arithmetic*, 2004.

the smallest rural household or farm to the nation. It happened that the quantity of the surplus was getting decidedly worse in precisely these years, but this is in no way essential to the elaboration of the problem. The population, then, divided into the basic constituent elements of “working” and “idle,” provided the basic matrix by which everything that the quantity of the surplus was a function of was enchained into a single logic.

This work was related to a general reinterpretation of the problem of China's putative overpopulation within the framework of nationalist discourse. No longer was China overpopulated with reference to the problem of subsistence: given economic independence and social stability, there would be simply no question of agricultural underproduction. Rather, China's rural sector was defined as overpopulated relative to the means of employing it, the scarcity of these means being, according to the theory, a function of China's semicolonial, semifeudal status.<sup>69</sup> The problem was not one of subsistence, but of a sectoral adjustment which was being blocked or misdirected, in the Chinese case, by the interference of a whole series of political (that is, “non-economic”) issues. It became a central tenet of nationalist populationism that China's putative overpopulation was not, or at least not only, the effect of inexorable, brutal Malthusian laws but of the disequilibrating tendencies that had been introduced into China by the effects of imperialism, which had on the one hand turned over the countryside to anti-capitalist landlord interests and on the other stymied the development of indigenous industry by draining capital away for the support of the capitalist class in imperial countries.<sup>70</sup> As Chen Han-

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<sup>69</sup> I return to this question below.

<sup>70</sup> There is a sizable and contentious scholarly literature on the economic impact of imperialism on China in this period, and on whether, and to what extent, this is an accurate depiction of the situation. See, for instance (to cite only the major books), Albert Feuerwerker, *The Chinese Economy, 1912–1949*, 1968, and *idem.*, *The Chinese Economy, ca. 1870–1911*, 1969; Ramon H. Myers, *The Chinese Peasant Economy: Agricultural Development in Hopei and Shantung, 1890–1949*, 1970; Philip C.C. Huang, *The Peasant Economy and Social Change in North China*, 1985, and *idem.*, *The Peasant Family and Rural Development in the Yangzi Delta, 1350–1988*, 1990; Thomas G. Rawski, *Economic Growth in Prewar China*, 1989; Kenneth Pomeranz, *The Making of a Hinterland: State, Society, and Economy in Inland North China, 1853–1937*, 1993; and R. Bin Wong, *China Transformed: Historical Change and the Limits of European Experience*, 1997 (one might also cite any number of articles by

seng notes with specific reference to Guangzhou, “this *artificial overpopulation* has been inevitably created by a land monopoly without sufficient industrialization.”<sup>71</sup>

It was theoretically possible that *lowering* the productivity of labour—utilizing more labour-power to accomplish the same or a lower amount of production—could alleviate the surplus. Feng Hefa discusses another possibility, apparently quite prevalent in Henan province: replacing animal labour with human labour. Even though animal labour is relatively cheaper (in terms of cost per unit of work) than human labour, human labour is *absolutely* cheaper, and there is so much excess labour-power to utilize. This can hardly be said to be an economic decision, but in the (ever worsening) absence of capital with which to improve production techniques and the (also worsening) tendency toward the fragmentation and shrinkage of small farms (which would not only make the incorporation of labour-saving machinery impossible but also make some of the labour-power of an animal itself redundant), what option remained?<sup>72</sup> But leaving aside the obvious problems in this, the surplus was presently so great that even a wretchedly low level of productivity would not suffice to absorb it. After listing some common failures of economy in the present allocation of labour-power, Xue Muqiao notes that “even

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Wong). I have my preference in this debate, but the truth of this particular matter is incidental to the fact that such was universally considered to be the case by economic nationalists in China, both on the right and on the left.

71 Chen, *Landlord and Peasant in China*, 1936: viii, emphasis added. Other texts that make basically the same point are Feng Hefa, “Zhongguo nongcun de guosheng laodongli: Zhongguo nongcun renkou guosheng lun de pipan 中國農村的過剩勞動力: 中國農村人口過剩論的批判 (China's Rural Surplus Labour-Power: A Critique of the Theory of China's Rural Overpopulation),” 1931, and *idem.*, *Zhongguo nongcun jingji ziliao* 中國農村經濟資料 (*Materials on the Chinese Rural Economy*), 1933; Cai Zhizhuan 蔡智傳, “Zhongguo renkou guosheng wenti 中國人口過剩問題 (The Problem of Overpopulation in China),” 1931; Xiang Jinsheng 向金聲, “Shenghuo ziliao guosheng lun: Renkou guosheng lun de pipan 生活資料過剩論: 人口過剩論的批判 (On the Surplus of Materials of Life: A Criticism of the Theory of Overpopulation),” 1935; Zhu Fusong 朱撫松, “Zhongguo renkou shi-fou guosheng 中國人口是否過剩 (Is China Overpopulated?),” 1935; Fang Xianting 方顯廷 (H.D. Fong), “Renkou guosheng yu gongyehua 人口過剩與工業化 (Overpopulation and Industrialization),” 1937; and Dong Rudan 董汝舟, “Renkou guosheng de wujie 人口過剩的誤解 (Misunderstanding Overpopulation),” 1933.

72 Feng, *Zhongguo nongcun jingji ziliao xubian* 中國農村經濟資料續編 (*Materials on the Chinese Rural Economy, Continued*), 1935: 736.

such wastage (荒廢 *huangfei*) of labour-power as this cannot completely eliminate the problem of surplus population in the rural sector.”<sup>73</sup>

As a quantity of available labour-power, then, a population can be matched more or less well with the requirements of agricultural production in relation to a national economy. In the Chinese case, they are matched very poorly. The fundamental issue is the comparative (relative) rationality of the allocation of this factor of production at the scale of the nation, the improvement of which entails the physical and spatial reorganization of the population. To reorganize effectively the physical and spatial structures of a population, though, one must have some knowledge of its present physical and spatial organization. This is where the rural population or family survey finds its *raison d'être*.

### RURAL STATISTICS

Registering the population became the absolutely necessary first step when any reformist project was launched. But if what was required was a quantification of the labour-power available, ideally, to the national economy, a simple number of people would hardly suffice. As we have learned, different groups of the population had substantially different values in terms of productive capacity. Population registration is a necessary first step, but it doesn't count as demography proper. A science is hardly constituted by counting the people. The real force of demography, at least in the form in which it was deployed in the rural reconstruction movement, did not at all lie in its taking the “whole population” as its object, irrespective of its structural distribution into taxable and non-taxable elements (which it did do, and which is something late imperial Chinese population registration rarely did, and when it did, it was to determine an amount of subsistence need, not productive capacity).<sup>74</sup> It lay rather in the set of tools it

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<sup>73</sup> Xue, *Zhongguo nongcun jingji changshi*, 1937: 122.

<sup>74</sup> See the first section of Chapter Three, above.

provided for relating this population to its correlates, land and capital.

A basic dataset consisting of a total population on a national scale, while not sufficient, would certainly be necessary. An attempt at this was made between 1928 and 1931: a census undertaken by the Ministry of the Interior (內政部 *Neizhengbu*) and organized by the Ministry's Statistical Office (統計司 *Tongjisi*) under the direction of Qiao Wanxuan 喬萬選 (1896–?1938) and the Statistical Bureau (統計局 *Tongjiju*) of the Legislative Yuan under the aforementioned Liu Dajun.<sup>75</sup> A number of estimates were available, which ranged from 280 million to 485 million.<sup>76</sup> The areas for which returns had been submitted by 1931, when the official report was published, are shaded in Figure 5.2. Combining these figures with returns from analyses of land registers and geographic and cadastral surveys, it was possible to get a basic picture of the relative allocations of land and labour per political unit, which is shown in Figure 5.3 (land-area and population for areas which had not submitted returns were filled in with estimates based on a variety of sources).<sup>77</sup>

A good deal of discussion, both methodological and analytical, was connected to this census and the information it provided at a nationally-aggregated scale. Following long imperial precedent, people argued about the feasibility of dispersing the population from where “land is thin and the people are thick” (地狹人稠 *dixia renchou*) to where “the land is broad and the

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75 See above, p. 196, n. 13. In 1930, Qiao, Liu, and Chen Changheng were the Chinese delegates to the Twenty-Ninth Session of the Institut International de Statistique (ISI) in Tokyo, September 15–25, 1930, out of which came the very useful collection of essays, *Chinese Population Statistics* (1930–1932). For the proceedings of this meeting, see Institut International de Statistique, *Bulletin de l'Institut International de Statistique, Tome XXV, I<sup>ère</sup> Livraison: Tokio, 1930, 1932*.

76 At the 1930 session of the ISI, the US statistician Walter Willcox (1861–1964) gave an estimate of 330 million, but this was widely rejected by the Chinese delegates. According to the China Maritime Customs, China's population in 1918 was 438 million, and according to an estimate by the Post Office in 1925, it was 483 million. The 1928 census yielded the oddly precise figure of 474,787,386. See China, Neizhengbu, *Minguo shiqinian hukou diaocha tongji baogao*, 1931: 1–2.

77 See the account of the census in the *Report*, “Minguo shiqi nian hukou diaocha zhi shimo 民國十七年戶口調查之始末 (A Complete Account of the 1928 Census of the Republic of China).”

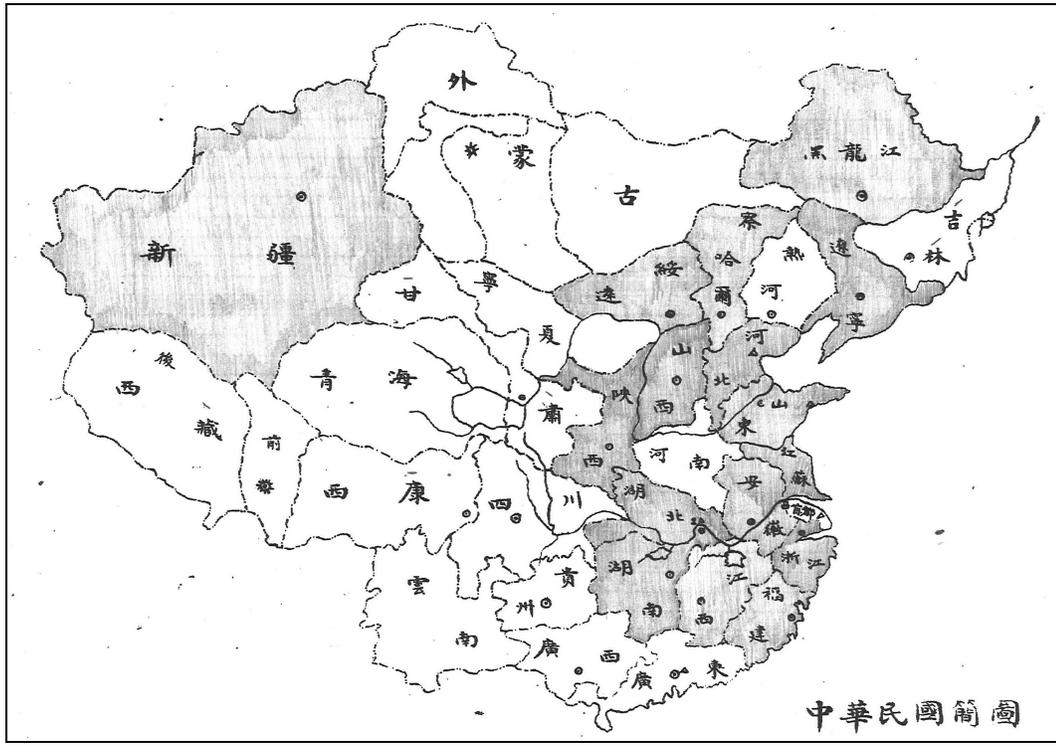


Figure 5.2: Areas for which population returns were submitted by 1931 under the 1928 census (Source: China, Neizhengbu, *Minguo shiqi nian ge sheng shi hukou diaocha tongji baogao*, 1931).

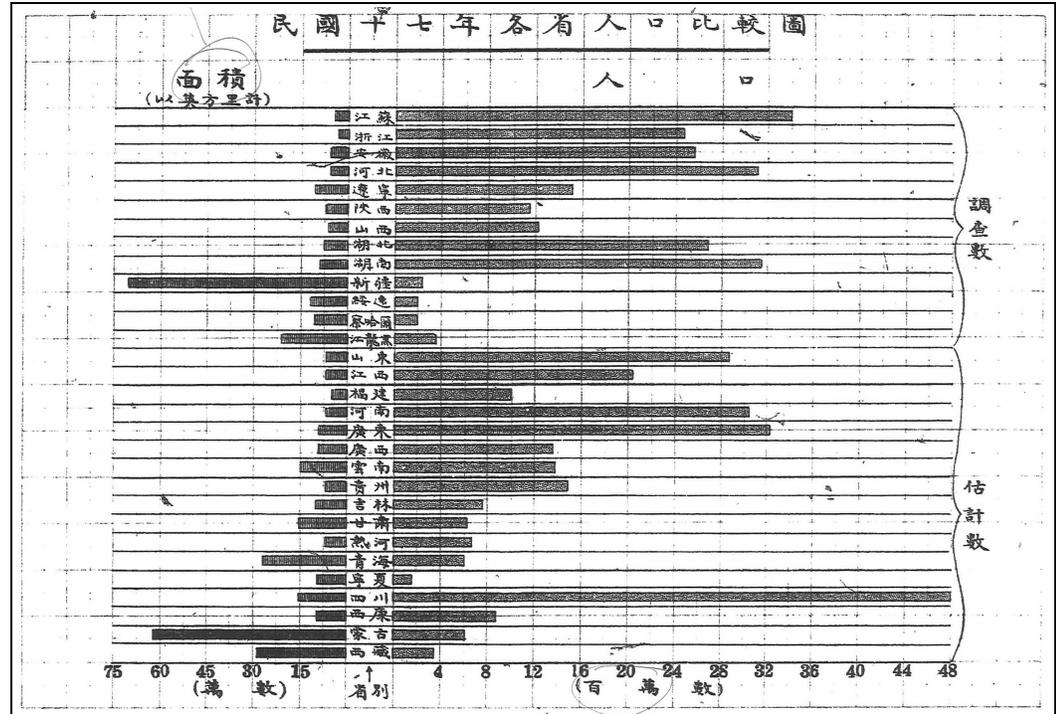


Figure 5.3: Comparative chart of land-area and population by political unit (Source: China, Neizhengbu, *Minguo shiqi nian ge sheng shi hukou diaocha tongji baogao*, 1931).

people are few” (地廣人稀 *diguang renxi*) and offering incentives for the reclamation of land, making all of the necessary adjustments for the variable productivity of lands in previously unreclaimed areas.<sup>78</sup>

All of this would have been fantastic under two conditions, neither of which were met: reasonable assurance of the accuracy of the returns, on the one hand, and the existence of something even remotely approximating an institutional capacity on the part of the Nationalist government to undertake coordinated interventions on a national scale, on the other. Like the 1912 census, it was never able to play the role intended for it, and it has been largely forgotten. As it happened, most reformist efforts were of necessity directed toward much smaller scales, and depended on knowledge also generated at these scales. This is where the Agricultural Colleges, Departments of Agricultural Economics and Sociology, Rural Revitalization Committees, and the survey work of the various extension centers set up in China in the early 1930s came into play.<sup>79</sup> In principle, the mathematical procedures involved here are scale-

78 See, for instance, the debate between Chen Changheng, Weng Wenhao 翁文灝, Xiao Zheng 蕭铮, and Qing Jian 青鑒 in 1935–1936 about whether population transfers to the Northwest (since, after 1932, Manchuria could no longer serve as an outlet for surplus population) held out any hope of alleviating population pressure (人口壓力 *renkou yali*). See Chen Changheng, “Woguo tudi yu renkou wenti zhi chubu bijiao yanjiu ji guomin jingji jianshe zhi zhengce shangque 我國土地與人口問題之初步比較研究及國民經濟建設之政策商榷 (A Preliminary Comparative Study of China's Land and Population Problem and a Discussion of Policies for the Reconstruction of the People's Economy),” 1935; Xiao Zheng, “Zhongguo de tudi yu renkou wenti: jian qingyi yu Weng Wenhao Chen Changheng er xiansheng 中國的土地與人口問題: 兼請益於翁文灝陳長衡二先生 (China's Land and Population Problem: A Request for Clarification from Mr. Weng Wenhao and Mr. Chen Changheng),” 1936; and Qing Jian, “Caipan Xiao Zheng yu Chen Changheng de lunzheng: guanyu Zhongguo tudi yu renkou wenti 裁判蕭铮與陳長衡的論爭: 關於中國土地與人口問題 (Moderating the Debate between Xiao Zheng and Chen Changheng: On Land and Population Problems in China),” 1936. For a useful history of land reclamation in this period, see Flemming Christiansen, *New Land in China, 1900–1937: State Intervention and Land Reclamation*, 1992; for examples of contemporary analyses of internal migration, see, e.g., Percy M. Roxby, “The Distribution of Population in China: Economic and Political Significance,” 1925, and Lien-en Tsao, “The Method of Chinese Colonization in Manchuria,” 1930.

79 For some of these surveys, see Cai Binxian 蔡斌咸, “Zhejiang nongye laodong zhi fenxi 浙江農業勞動之分析 (An Analysis of Agricultural Labour in Zhejiang),” 1936; Feng Hefa's two collections, previously cited, 1933 and 1935; China, Xingzhengyuan, *Jiangsu sheng nongcun diaocha 江蘇省農村調查 (Rural Survey of Jiangsu Province)*, 1933a; and *idem.*, *Zhejiang sheng nongcun diaocha 浙江省農村調查 (Rural Survey of Zhejiang Province)* 1933b; Li Wenhai, ed., *Minguo shiqi shehui*

independent. They are applicable to any scale of economic unit: a family, a village, a county, a province, a country, a region, or the world.

The MWU signals, in the clearest possible terms, the emergence of a new series of relationships into the field of governmental practice: the relationship between a population in its material reality and its capacity to work; between a population's capacity to work and the existing possibilities of utilizing that capacity; and so on. Correlated to this was an effort to determine the proportions of a given rural population that belonged to the “productive classes” (生產階級 *shengchan jieji*).<sup>80</sup> This meant determining the population's age and sex structures and dependency ratios. Here, the problem is not just the mismatch between labour-power and the productivity of the land as presently distributed; it also concerns how much of the population is excluded from agricultural labour simply by virtue of the structure of the population itself. Obviously, according to this discourse, the more producers there were relative to the number of consumers, the better things would be for the national economy. It was then discovered that to different levels of economic development corresponded different population structures or compositions (人口結構 *renkou jiegou*). This is the precursor to the aforementioned demographic transition theory that would play such a central role in post-World War Two populationism: the division of populations into “progressive”, “stable,” and “regressive” types. It derived ultimately from the work of the Swedish liberal anti-Malthusian, Gustav Sundbärg (1857–1914), on comparative age distributions. A given population structure would both reflect immediately its level of development and identify avenues for intervention. A population

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*diaocha congbian* 民國時期社會調查叢編 (*Collection of Republican Period Social Surveys*), 2004; Institute of Pacific Relations, *Agrarian China: Selected Source Materials from Chinese Authors*, 1938; and Qiao Qiming, “Shanxi Qingyuan xian yibai sishisan nongjia renkou diaocha zhi yanjiu 山西清源縣一百四十三農家人口調查之研究 (Analysis of a Survey of 143 peasant families in Qingyuan County, Shanxi Province),” 1932.

80 Xiao Chunjin 蕭純錦, “Renkou yu jingji wenti 人口與經濟問題 (Population and Economic Problems),” 1925: 13.

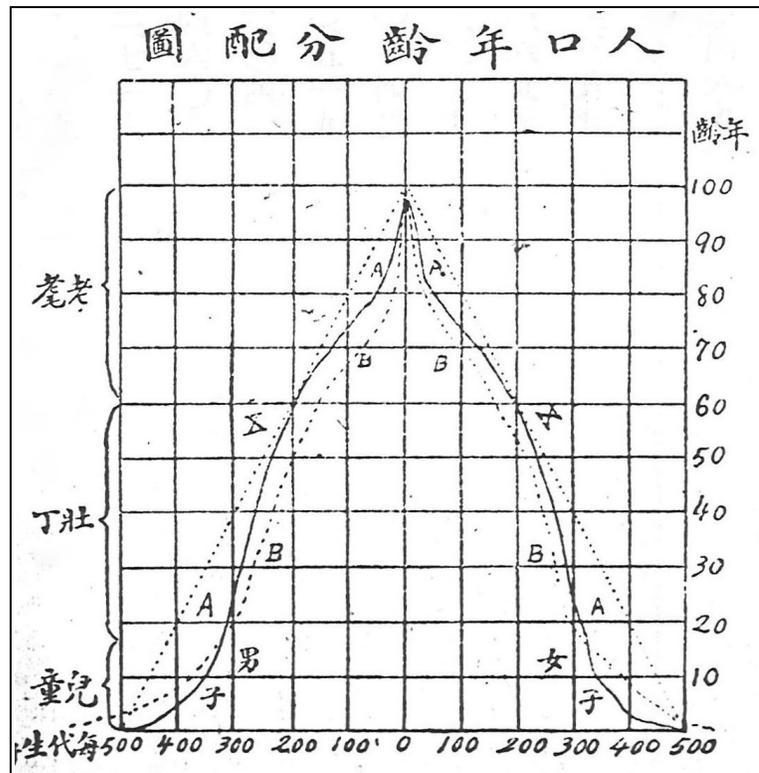


Figure 5.4: Age- and sex-distribution pyramid (Source: Xiao, “Renkou yu jingji wenti,” 1925: 14).

pyramid (人口塔 *renkou ta*)—the basic principle of which is shown in Figure 5.4—constructable for any scale or area, gave a precise notion of the relationship between a population and the proportion of it belonging to the productive classes. The Man-Equivalents that it comprised was easily derivable from such an image. (In this context, “progressive” means “growing” and “regressive” means “shrinking”—they do not equate to more and less “advanced” populations. Indeed, the relationship is reversed: advanced capitalist countries tend to have a regressive population type, while poor, colonized, or semicolonized countries tend to have a progressive type.) To a progressive type corresponds high birth- and death-rates, so that the pyramid is thick at the bottom and very narrow at the top (there are many children and few old people in the population); a stationary type will appear as a smooth conical shape; a regressive population is thinner at the bottom and thicker at the top (few children and many old

people).<sup>81</sup> Sundbärg's “standard age distribution” (translated into Chinese as 標準年齡分配 *biaozhun nianling fenpei*)<sup>82</sup> and some results of Chinese surveys are given below.

Age group	Sundbarg's three types of population			Li Jinghan, Dingxian	Chen Huayin, Various
	Progressive	Stable	Regressive		
Under 15	40	33	20	33.32	30.28
15–49	50	50	50	49.11	55.97
Over 50	10	17	30	17.56	13.75

Table 5.5: “Standard” vs. Chinese age distributions (Sources: Li, “Cong Dianxian renkou diaocha suo fajian zhi renkou diaocha jishu wenti,” 1937; Chen, “Laogong jiating renkou dongjingtai zhi fenxi,” 1931).

The “demographic transition” is just the historical shift of a population from a progressive—many births and many deaths—through a stable to a regressive form—few births and generalized late death. Far from being a problem, the fact that different surveys gave different results was all to the good, since reform efforts were of necessity directed to local scales of organization.

The properties of a population, though, are not by themselves ultimately determinant of the possibilities of employing it. That is, the quantity of surplus labour-power is not a simple function of the population, but of the population in its economic relations to land and capital. In this respect, populationism does not consist in affirming that the population is the ultimate

81 The basically non-centralized nature of the dissemination of this knowledge in China is clearly indicated by the fact that, in four different discussions of these demographic methods, we find four different translations of these terms: for “progressive,” we have 漸增的 *jianzengde* (Chen, 1931), 增加式 *zengjiashi* (Yan, 1935), 增多類 *zengduolei* (Li, 1937), and 進化的 *jinhua* (Xu, 1930); for “stable,” 静止的 *jingzhide* (Chen, 1931), 静止式 *jingzhishi* (Yan, 1935), 穩定類 *wendinglei* (Li, 1937), and 穩定的 *wendingde* (Xu, 1930); and for “regressive,” 遞減的 *dijiande* (Chen, 1931), 遞減式 *dijianshi* (Yan, 1935), 減少類 *jianshaolei* (Li, 1937), and 退化的 *tuihuade* (Xu, 1930). See Chen Huayin 陳華寅, “Laogong jiating renkou dongjingtai zhi fenxi 勞工家庭人口動靜態之分析 (An Analysis of the Statics and Dynamics of Worker Family Population),” 1931; Yan Xinzhe 言心哲, *Zhongguo xiangcun renkou wenti zhi fenxi 中國鄉村人口問題之分析 (An Analysis of Chinese Rural Population Problems)*, 1935; Li Jinghan 李景漢, “Cong Dianxian renkou diaocha suo fajian zhi renkou diaocha jishu wenti 從定縣人口總調查所發見之人口調查技術問題 (Technical Problems in Population Censuses Arising from the General Population Census of Dingxian),” 1937; Xu Shilian, *Zhongguo renkou wenti*, 1930.

82 Xiao, “Renkou yu jingji wenti,” 1925.

determinant, but in the establishment of this relationship itself. Population statistics occupied a, but not necessarily *the* central place, within the more general statistical apparatus of the Nationalist government, which involved trade, industrial, and cadastral surveys as well. Liu Dajun and Qiao Wanxuan, from their positions within the National Government, worked hard to set up a national statistical system which could encompass all of these areas, in consultation with a number of experts working in university economics, sociology, and commerce departments, and with sympathetic officials at lower—provincial, municipal, and county—levels of government. The overlaying of the Guomindang party apparatus onto the state apparatus in the late 1920s and 1930s provided a certain, though certainly not a smoothly-functioning, machinery for drawing similarly-inclined activists together at various levels.<sup>83</sup>

The rural reconstruction movement cannot, then, be explained solely or even primarily in terms of the population. No claim is made here that the population is the “secret key” that unlocks the truth of that broad and diverse movement. Rather, the population structured the field of governability with reference to which a good deal of the practical activities of the movement (to which I turn next) could be organized. The placing of labour(-power)—and thereby the population—at the centre of the rural problem allowed the latter to be connected to a series of other problems which had theretofore been separate. Here again, the population acted as a mediator of reformist practices, by its common presence in several of them, the operator by which diverse species of governmental activity could be linked together.

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83 See, for instance, the immense collection of surveys compiled in Taiwan in the 1970s as *Minguo ershi niandai Zhongguo dalu tudi wenti ziliao* 民國二十年代中國大陸土地問題資料 (*Materials on the Land-Use Question in China in the 1930s*), 1977, which comprises over 200 substantial volumes; or Feng Hefa's aforementioned attempts to collate the results of a huge number of rural surveys: Feng, *Zhongguo nongcun jingji ziliao*, 1933, and *idem.*, *Zhongguo nongcun jingji ziliao xubian*, 1935. For more information on Feng and the extensive rural survey activities of the National Labour University (國立勞動大學 *Guoli laodong daxue*) in Shanghai, see Ming K. Chan and Arif Dirlik, *Schools into Fields and Factories: Anarchists, the Guomindang, and the National Labor University in Shanghai, 1927–1932*, 1991, esp. Chapter 5, 119–151.

## THE CHINESE AGRARFRAGE

Little mention is made in Buck's survey of the fact—which was evident to everybody—that China's economy, agricultural as well as industrial, was hit very hard by the global depression which unfolded in exactly the years covered by it, 1929–1933.<sup>84</sup> But the deepening and worsening of the agrarian crisis in these years built on foundations of crisis in the Chinese economy that had been established well before this period. Indeed, the condition of the depression having the impact it did on Chinese agriculture is that this sector had *already* been inscribed into the structures and dynamics of the capitalist world-economy. The basic features of the agrarian crisis are relatively well-known (even if, of course, the causes behind them are controversial),<sup>85</sup> and there is no pressing reason to describe them in detail here. Rather, I will show how the transcendental schematization of the economic as the reciprocal organization of land, labour, and capital structured responses to the crisis, and how the specific understanding of the population as a quantity of labour-power was inextricably bound up in these responses. From the national-economic perspective that correlates to this understanding, the agrarian crisis appeared as a set of processes that exacerbated disequilibrating tendencies within an economy that was losing its “consistency” (consistency being a function of being organized under a single managerial function or subjectivity, as a single enterprise—that is, under the sign of the nation

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84 In fact, he explicitly attributes one of the primary effects of the depression—the “rural exodus” (農民離村 *nongmin licun*, lit. “peasants leaving the villages”) resulting from both the collapse of production and the shifts in relations of land tenure (land concentration on the one hand and increasing miniaturization or parcellization of land holdings on the other; hyperexploitation)—not to the depression but to “the inexorable pressure of population on resources”: “In the past Malthusian checks have been a grim reality. Population increase has been curtailed by war, natural disasters, and disease. It will continue thus unless economic development and a curtailed natural increase work hand in hand to yield higher standards of living. In China, as in any other country, the maintenance of a desirable standard of living can only come about through a *proper adjustment between resources [land] and population [labour]*” (*Land Utilization in China*, 1937: 397, emphasis added).

85 The most recent, and a very useful, treatment of the depression in the agricultural sector in relation to the national economy is Shiroyama, *China During the Great Depression: Market, State, and the World Economy, 1929–1937*, 2008: 91–113.

as economic subject).<sup>86</sup>

One might think that, with such an egregious surplus of labour-power in the agricultural sector, anything that would reduce the amount of labour-power there would be perceived as a good thing. But this was not the case. One might also expect that where one found people decrying the loss of labour-power in the agricultural sector one would not also find agreement on the question of labour-power being surplus in the first place, but here again one's expectation would be disappointed. The phenomenon of the “rural exodus,” conceived in its systemic aspect as resulting in a more or less well-regulated relative or absolute decline in the rural population, was in fact by and large seen very negatively, and again, not just in China.<sup>87</sup>

Even though this phenomenon was absolutely common within processes of capitalist agricultural development, its effects were very different according to whether they took place in

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<sup>86</sup> See above, p. 206.

<sup>87</sup> This issue threatens to force us to broach the immense topic of the relation between capitalism in its various historical forms and urbanization. Instead of doing that, however, I will simply note that the rural exodus was a significant *governmental* problem in numerous countries in the late nineteenth and early twentieth centuries, including—perhaps surprisingly—Britain. For Britain, see for instance G.B. Longstaff, “Rural Depopulation,” 1893; Ernest Bennett, *Problems of Village Life*, 1914; Harold Peake, “The Regrouping of Rural Population,” 1918; Patrick Abercrombie, “The Preservation of Rural England,” 1926. The Country Life Movement in the United States (c. 1900–1920) is emblematic of this. For contemporary literature on the US, see L.H. Bailey, “Some Present Problems in Agriculture,” 1905; Frank A. Waugh, *Rural Improvement: The Principles of Civic Art Applied to Rural Conditions Including Village Improvement and the Betterment of the Open Country*, 1914; Reginald Lennard, “The Employment of Boys in Agriculture and the Rural Exodus,” 1917; Horace Plunkett, “Rural Regeneration,” 1921; E.R.A. Seligman, *The Economics of Farm Relief: A Survey of the Agricultural Problem*, 1929; see also David B. Danbom, “Rural Education Reform and the Country Life Movement, 1900–1920,” 1979. For France, see John G. Thompson, “Urbanization and Rural Depopulation in France,” 1925; and Timothy B. Smith, “Assistance and Repression: Rural Exodus, Vagabondage and Social Crisis in France, 1800–1914,” 1999. A representative bibliography of the contemporary Chinese literature on the rural exodus can be found in Chi Zihua 池子華, *Zhongguo jindai liumin, xiudingban* 中國近代流民, 修訂版 (*Refugees in Modern China, Revised Edition*) 2007: 296–300; for more recent empirical studies see Zhou Zhongjian 周中建, “Er-San-shi niandai Sunan nongmin licun wenti yanjiu 二三十年代蘇南農民離村問題研究 (A Study of the Problem of Rural Exodus in Southern Jiangsu in the 1920s and 1930s),” 1999; Zhu Hanguo 朱漢國 and Wang Yinhan 王印煥, “Minguo shiqi Huabei nongmin de licun yu shehui biandong 民國時期華北農民的離村與社會變動 (Rural Exodus and Social Change in Republican North China),” 2001; Li Fengqin 李鳳琴, “20 shiji 20–30 niandai Huanghe liucheng nongmin licun wenti yanjiu 20 世紀 20–30 年代黃河流域農民離村問題研究 (A Study of Urbanization and Rural Exodus Along the Yellow River in the 1920s and 1930s),” 2003.

advanced capitalist (which is to say, sovereign and colony-possessing) countries or in colonial or semicolonial countries, according to Chinese analysts. Further, where its negative effects could ostensibly be reduced in a colonial setting by the “rational administration” delivered by the colonial power, no such rationalization existed in a semicolony, where, in place of rational management, one found nothing more than a scramble for booty. Noting the generality of the phenomenon of relative rural depopulation, Xue Muqiao, for instance, identified the crucial difference introduced by China's semicolonial, semifeudal status: although the rural populations of England and Germany were declining (not just relatively but absolutely as well),

in these countries, the reduction of rural population is principally due to the rapid development of urban industries. Thus, in these places, rural labour power is *not* surplus, and there are even regular labour shortages, which in turn stimulates the development of productive technique in the rural areas.<sup>88</sup>

In China, by contrast, according to Chen Han-seng, areas such as Guangdong have become

area[s] of capitalistic exploitation without experiencing a corresponding development of [their] resources, physical and human. The economic apparatus has not been adapted to the changing requirements brought about by the closer dependence of local economies upon world currents; it has simply been permitted to break up. There has been no reorganization of the relations between the producing and the non-producing participants in the economic process, but merely a scramble in which not even the most elementary precautions were adopted to keep alive the goose that lays the golden egg.<sup>89</sup>

In the Buck survey, these factors appear as a kind of inexorable necessity, or at least as “the given,” along Malthusian lines. In the discourse of economic nationalism, though, they were nothing like that. They were a function of China's semicolonial, semifeudal status in the global economy. In China's present condition, control over the circulation and accumulation of capital there had been turned over to a series of non-national agents whose interests were not China's own: usurers and landlords, on the one hand, and imperialist nations and foreign capitalists, on the other. For this reason, the status of being a semicolonial country was not at all “midway”

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88 Xue, *Zhongguo nongcun jingji changshi*, 1937: 120.

89 Chen, *Landlord and Peasant in China*, 1936: 113.

between sovereignty and dependency: semicolonial did not mean “half-colonial,” in the sense of being half as bad as being a colony. In terms of its economic and political effects, according to these authors, it was *much worse* than being a colony.<sup>90</sup> Similarly, a semifeudal condition was worse than a simply feudal one, because in this condition all of the increasingly rapacious processes of extraction were mitigated by none of the corresponding paternalist obligations.

One proposed solution to the rural exodus was to distribute China's population more evenly across its territory: despite China's putative aggregate overpopulation (which, as we've seen, was far from universally attested in any case), vast areas of its land mass displayed very low population densities, while others were “astonishingly” crowded.<sup>91</sup> Migration was bound to happen as “population pressure” (人口壓力 *renkou yali*) rose beyond feasible levels, but the problem was the total lack of methods to direct it. Properly channeled, or at least left to itself free of the interference of non-economic forces, migration would serve as a means of regulating or adjusting (調劑 *tiaoji*) population pressure.<sup>92</sup> But with the hobbling of China's economic sovereignty and the openings thereby provided for the penetration of economic agents whose interests were not China's own, combined with the fact that more and more of the aggregate agricultural output was being run through the medium of price (while prices were declining), the effect would necessarily be either a decline in standards of living or the ejection of a portion of the population from the sector whose output it is, an ejection that could be more or less controlled. But where were they to go? Where the only escape route was to cities that had no means of absorbing the excess population instead of to new agricultural land, that was no help at all to the national economy (because these migrants would just become paupers). Where the

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90 It is for this reason that some scholars prefer to translate Sun Yat-sen's characterization of China's status (次殖民地 *cizhimindi*) as “hypocolonial” rather than semicolonial.

91 Jin Lunhai, *Zhongguo nongcun jingji yanjiu* 中國農村經濟研究 (*A Study of China's Rural Economy*), 1937: 326.

92 *Ibid.*, 327. Recall this term from my discussion of vital statistics and central banking in Chapter Three, p. 132.

escape route was to other countries, that was positively harmful, insofar as this labour-power came under the control of *other* capitalists, capitalists other than China itself. Thus, it was not just that the networks that would ensure equilibrium at a national level were falling apart (崩潰 *bengkui*), if they had ever existed. They were also being or had been replaced by channels for the circulation of labour-power that were organized for the benefit of other economic agents. Just as national-level circulations of labour-power were breaking up, supra-national networks of labour supply were swooping in to take their place, moving dislocated peasants either to the plantation colonies of Southeast Asia or to the railways and forest-clearance projects of North America.<sup>93</sup> All of the potential benefit of this labour-power, then, was accruing to *other* capitalists. That is, being drained away from the Chinese national economy, which might have been able to utilize it if it were not for imperialism.

The contrary of this was the effects that the rural exodus had on the sending areas. According to one study of Jiangxi province,<sup>94</sup> existing patterns of migration made things worse by “sucking out” (吸出 *xichu*) precisely the bearers of the most labour-power per unit (adult men) from the agricultural sector to support the industrial sector, leaving behind only “the old, the young, the wasted, and the weak” (老 *lao*, 幼 *you*, 廢 *fei*, 弱 *ruo*). Thus, the “quality” (品質 *pinzhi*) of the rural population was decreasing, providing an ever less fertile ground for the implantation of such capital as might arise from industry and return to the countryside seeking outlets for investment.<sup>95</sup> Thus, the issue of the quality of labour-power was added to that of its quantity (but quality in a very particular sense: that of the amount of labour-power present per

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93 This example is from Chen, *Landlord and Peasant in China*, 1936: 111.

94 Wang Yijin, “Zhongguo jindai renkou yidong zhi jingji de yanjiu 中國近代人口移動之經濟的研究 (An Economic Study of Modern Population Migration in China),” 1936.

95 This set of observations will be immediately recognizable to anybody familiar with the present discourse on the “rural crisis” in China. Those unfamiliar with it can see Alexander Day, “The End of the Peasant: New Rural Reconstruction in China,” 2008, and *idem.*, “Deconstructing Modernization’: Wen Tiejun and ‘Sannong wenti’,” forthcoming.

unit of population, and of its productivity).

In this way, the formation of a “national market” was impeded by the maladjustments of the industrial, financial, and agricultural sectors introduced by, among other things, uncontrolled flows of people. On yet another hand—we need more than two here—the mismatch between factors of production is made worse by the flight of capital from the agricultural sector. Where capital is too abundant, it should (and would under conditions of incipient equilibrium) flow to where labour is too abundant. By the same token, and conversely, where labour is not abundant enough relative to capital, labour should flow there until equilibrium is reached. The problem arises out of an inequality in rates of transfer between sectors. Rural instability—which had been endemic in certain parts of China since at least the middle of the nineteenth century, with the outbreak of the Taiping Rebellion and other rebellions, although these were in some respects themselves responses to rural instability—creates capital flight, and once capital is concentrated in the cities, the continuation of the rural instability that is, at least in part, engendered precisely by that capital flight prevents capital from returning. Not only was capital blocked up in Shanghai, as Ma Yinchu notes,<sup>96</sup> but the existing organization of rural society, its instability and so on, only exacerbated the tendency of capital to accumulate there, not only because the rural elites were bringing their capital to the city but also because these newly urbanized elites could not find safe avenues of investment for their capital in rural areas. This is bad for everybody: as we noted in Chapter Three, the money markets in Shanghai were overheated, leading necessarily to such phenomena as stock market crashes (the first of which occurred in Shanghai in 1921)<sup>97</sup>—that is, the devaluation (destruction) of capital—while labour markets in rural areas were drastically “undernourished.”<sup>98</sup>

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96 Ma, *Zhongguo jingji gaizao*, 1935: 418; see above, p. 135.

97 Bryna Goodman, “Economics, Individual Freedom, and National Sovereignty,” 2011.

98 For a valuable study of some of the measures implemented by the NEC to deal with this issue starting in 1931, see Zanasi, *Saving the Nation: Economic Modernity in Republican China*, 2006.

Different practical solutions were proposed from the left and the right here, or at least from the left and the right *within* the nationalist discourse that I am describing here. (The “Maoist” discourse was developing into something quite different in this period.) For the left, proletarianization was an inevitable correlate of economic development (which is not quite the same as claiming that it was desirable). But it was not happening due to imperialism. The agricultural sector having been turned over to economic agents that were not the nation, and the agents of national capital having quite reasonably fled to the cities, what *should* have been a process of proletarianization had become, in fact, a process of pauperization.<sup>99</sup> On the right, proletarianization was to be prevented by the formation of rural industries and the systems of finance that would make them feasible. What is read by some scholars as a series of attempts within a nationalist framework to develop a “uniquely Chinese modernity” appears in this context rather as a way for China to have all the benefits of capitalism with none of the drawbacks (rapid and uncontrolled urbanization, with all the “social problems” that attend it), a way for China to become a “nation of proprietors,” which sets this discourse alongside that of the Russian narodniks, the rural populists in the United States, and economic nationalists in India, Egypt, Mexico, and a range of other places.

This was precisely the problem that the development of cooperatives (合作社 *hezuoshe*) in the 1920s and 1930s was meant to solve.<sup>100</sup> Because they would be subject neither to supra- nor to sub-national control (but very much subject to national control), they would be able to create

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99 Chen, *Landlord and Peasant in China*, 1936: x.

100 For the history of this movement, see Guo Tiemin 郭鐵民 and Lin Shanlang 林善浪, *Zhongguo hezuo jingji fazhan shi* 中國合作經濟發展史 (*The Development of the Cooperative Economy in China*), 1998; Lai Cheng-chung, “The Structure and Characteristics of the Chinese Co-operative System, 1928–1949,” 1989 and *idem.*, *Jindai Zhongguo de hezuo jingji yundong, 1912–1949* (*xiudingban*) 近代中國的合作經濟運動 (修訂版) (*The Cooperative Economics Movement in Modern China, 1912–1949, Revised Edition*), 2008. For contemporary histories, which indicate many of the channels of transmission of cooperativism, see Yin Shusheng 尹樹生, *Shijie hezuo yundong shi* 世界合作運動史 (*History of the World Cooperative Movement*), 1937, and Herr Raiffeisen *Among the Chinese Farmers*, published by the China International Famine Relief Commission in 1930.

the scale of organization and the stability requisite for the distribution of national capital into the rural economy. Here one detects completely different logics at work in organizations that have the same name: Nationalist cooperatives were to serve, by being linked through a series of intermediary institutions to the central planning and coordinating agency of the Chinese national bourgeoisie, the NEC, as a means for the recirculation of national capital into the rural sector, and for the recapitalization of the countryside (both in the sense of rationalizing and organizing the wealth that presently existed there and of forming a viable channel for the distribution of loans through agricultural banks). In short, they were to serve as the elementary cell of the national economy in the rural sector.<sup>101</sup> Communist cooperatives—prior to the 1950s, when they came to exist within a very different set of coordinates—were intended on the one hand to create a minimal scale of organization that would precisely *prevent* the penetration of capital and the inscription of rural areas into networks of capital circulation controlled by the Nationalist-dominated cities, and on the other to organize production for conducting the revolution.

For writers on both the left and the right (again: within the national-economic project, which, as I've mentioned, does not map neatly onto the question of party-affiliation), as far as the sub-national scale was concerned, these deleterious effects were precisely *not* due to the influence of capital, but to the influence of *non-capitalist*, feudal elements. Capitalist forms of economic organization were not at all the problem; they were the solution. To see how a smooth, equilibrating flow across a unified national economic space was seen as constitutive of capitalism itself, let us look at two of the central distributive mechanisms of a capitalist economic formation: rents and wages.

Noting the extremely high and, further, seemingly arbitrary rents being charged by

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<sup>101</sup>Thus, there is nothing the least bit “traditional” or “anti-capitalist” about co-operatives organized within this system. To be sure, they were designed to enable peasants to stay on the land, but their systemic function is entirely new.

landlords, Chen Han-seng notes that “no one can mistake this for capitalist rent.”<sup>102</sup> Here, Chen draws on the Ricardian theory of rent, which divides it into two forms: “marginal” or “differential” (that is, capitalist) rent, and “absolute” rent. The former is determined strictly (by definition) by the marginal productivity of the land, its differential fertility (so that non-productive land receives no rent and the most productive land receives the highest rent). In this kind of rent, no rent is charged simply on account of the mere ownership of the land. This latter form of rent is called “absolute.”<sup>103</sup> Without occupying a monopolistic position, landlords would have no way of charging this amount: their tenants would simply pack up and leave for lands on which this charge was not levied. Thus, under conditions of free factor mobility across a national space, capitalist rent automatically establishes itself,<sup>104</sup> and, where there is absolute rent, there must exist non-economic monopolies, and there cannot be capitalism. Where rent is determined solely by the forces of equilibration, that is capitalist rent, and it would be established simply by peasants' freedom and the ability to move anywhere in the country.<sup>105</sup> And this by itself would serve to effect the “adjustment of population and resources.”

This is true with regard to wages as well. It is not just that the development of capitalism would ensure the relative equalization of rents and wages—which is to say, their conformity to strictly economic criteria—across a national territory (just as it would with interest rates, and

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102Chen, *Landlord and Peasant in China*, ix.

103Note that it is *not* a “sur-rent”: it is not the effect, but the precondition of any productive process.

This distinguishes it from “super-profits.”

104T.N. Carver, discussed above, makes the same point when he argues that capitalism establishes itself with only the removal of constraint. On this point, then, Chen—a member of the Communist Party in the revolutionary period—occupies the same theoretical ground as Carver—one of the architects of American megacapitalism.

105This would be accomplished by the formation of transport infrastructure and the equal provision of information about opportunities. One discovers here the rationale behind the call, made by Sun Yat-sen among others, for the nationalization of land, which would serve to eliminate absolute rent. The elimination of absolute rent is antagonistic not to capital (indeed, quite the reverse); it is antagonistic to “feudal privileges.” Hence the irony of a situation in which a measure intended to “limit” capitalism is precisely the condition of its installation. See, on this, Lenin's still unequalled analysis of Sun and his nationalist policies, made just at the moment of the establishment of the Republic: “Democracy and Narodism in China,” 1912.

here a central bank plays exactly the same role with regard to interest rates as the unification of labour markets plays with regard to wages, and the nationalization of land plays with regard to rents): it just *is* this process. As Chen Han-seng notes,

In a pre-capitalist society, wages in general are not only lower than in the capitalistic, but they have a far greater variation of scale owing to the lack of an articulated and unified market for labour power. There is, thus, a wide variation of wage scales among the districts and even among nearby villages.<sup>106</sup>

Since, the productivity of labour being equal, high wages or wage-equivalents reflect labour scarcity and low wages labour overabundance, so that wage differentials for the same work are in and of themselves evidence of disequilibrium (*if and only if* wages are the universal method of payment), the wage mechanism should function automatically to adjust population and capital: workers will move to places where and occupations in which wages are higher, thus lessening the surplus in the labour-abundant area or occupation and bringing wages up there, and meeting the demand in the labour-scarce area and bringing wages down there. Under the conditions of the value relation, wage data can serve as fairly precise indices of the degree of the surplus of labour-power relative to the means of employing it and the degree of interconnection between one area and another. Hence, a good deal of attention was devoted to wage differences and payment systems, both as indices of the lack of an effective national labour market and as ways to rectify that lack. Attempts were made to calculate monetary equivalents for the incredible diversity of forms of payment found in the rural sector in China. As I noted above with regard to the problem of standardizing land measurement in the face of the multitudinous sizes of 畝 *mu* (the “standard” unit of land measurement), how was one to find out who was being paid what, and hence how egregious the discrepancies were, if on the one hand farm incomes (from which wages would be paid) were comprised of so many different elements and, on the other hand, farm labourers were being “paid” in so many different ways (lodging, food,

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<sup>106</sup>Chen, *Landlord and Peasant in China*, 1936: 99.

clothing, credit, money...)?<sup>107</sup>

The aggregate surplus discussed above was, in some respects, less important than what different wage rates could show about the degree of integration existing between different places, and about the constitution of “the economic” itself. Even and stable wages is both a precondition and an index of the free flow of capital across an economic space, and the presence of divergences from this condition indicates breaks, blockages, and low levels of integration. For this reason, any productive activity that cannot be calculated in terms of wages or virtual wages—that is, that cannot be brought under the value relation of universal exchangeability—is, by that very fact, excluded from the domain of the economic (housework, for instance).<sup>108</sup>

Recall that W.S. Jevons called the sum of factors of production under the control of a single enterprise an *organon*. The bearer or subject of these factors is, therefore, an *organism*, in which the right combination of factors and the free circulation of value (vitality) ensures the best possible result (health). Where the imputed subject of the economic process is a nation, the organization of economic forces around, and the ascription of the rights of private property to, economic agents operating at sub- and supra-national scales appear as parasites installing themselves within the flows that ought properly to constitute that nation, diverting and draining away the value/vitality that is its lifeblood. If vitality or value is not flowing freely across an economic space—or if it is draining into sinkholes, never to be seen again<sup>109</sup>—this is due to the

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107For some of these studies, see Wang Younong 王友農, “Hebei Ningjin nongye laodong 河北甯津農業勞動 (Agricultural Labour in Ningjin, Hebei),” 1934; Xi Chao 西超, “Henan nongcun zhong di guyong laodong 河南農村中底雇傭勞動 (Hired Labour in Rural Henan),” 1934; Yang Kaiqu 楊開渠, “Zhejiang sheng nongcun gongren gongzi zhi yanjiu 浙江省農村工人工資之研究 (A Study of the Wages of Rural Labourers in Zhejiang Province),” 1934; and Feng Hefa, *Zhongguo nongcun jingji ziliao xubian*, 1935.

108Buck, *Land Utilization in China*, 1937: 475. Conversely, bringing more and more productive activity under the value relation is a major way to generate “growth.”

109*Vis-à-vis* the supra-national scale, this is clearly an iteration of the “drain theory” of imperialism, in which the latter's basic mechanism is identified as the drain of capital from colony to metropole, a theory first developed in the 1870s by Dadabhai Naoroji (1825–1917), an early Indian economic nationalist, and taken up to some degree by Marx in his later writings. On this, see again Goswami, *Producing India*, 2004: 209–241; on Naoroji and Marx, see 224–227. See also Bipan Chandra, *The*

economic (non-economic from the perspective of the nation) operations of landlords, with their absolute rather than differential rents; usurers, with the inordinately high interest rates that they can command due to their monopolistic position; and merchants, with their monopolies of market information and supply chains, with the superprofits that accrue thereto. They are like the diseases that, according to Wu Lien-teh, as we recall from Chapter Two, “insidiously sap the vitality of the population.”<sup>110</sup> Again, this is no mere metaphor. It is a signal that we are dealing with a form of government that constitutes seemingly diverse phenomena within a common field of governability, that operates with and on organisms and economies in the same way, to maximize accumulation. Organisms (“bodies”) and economies (“national accounting units”) are *not* “really” different things brought into relation by means of a metaphORIZATION; as far as this form of knowledge—that is, the capitalist world-episteme—is concerned, they are articulations at different scales of a single matrix of intervention.

Hence, the two great enemies of economic nationalism: feudalism or provincialism, which interferes with the operation of economic forces at the national level by A. organizing them at a sub-national level, and B. introducing non-economic forces (for instance, absolute rent as against differential rent and non-market-determined rates of interest on loans); and imperialism or cosmopolitanism, which does so by A. organizing economic forces at a supra-national level, and B. introducing non-economic forces (reparations, the enforcement of artificially low tariff rates, dumping, and so on). We can see, too, that the nature—population—society schema that we saw structuring the practice and organization of public health in the previous chapter is an articulation in another domain of the land—labour—capital schema discussed in this chapter.

And in the Foreward to the *Statistical Report of the 1928 Census of Households in Each*

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*Rise and Growth of Economic Nationalism in India: Economic Policies of Indian National Leadership, 1880–1905*, 1966, and Vir Bahadur Singh, *From Naoroji to Nehru: Six Essays in Indian Economic Thought*, 1975. The drain theory is a precursor of the “development of underdevelopment” theory of imperialism associated with world-systems scholarship.

<sup>110</sup>Wu, “The Problem of Venereal Diseases in China,” 1926: 30.

*Province and Municipality (Minguo shiqi nian ge sheng shi hukou diaocha tongji baogao)*, we find something very similar, in the repetition of a basic nationalist trope: “There are three factors in the establishment of a nation: 1. people (人民 *renmin*), 2. land (土地 *tudi*), and 3. sovereignty (主權 *zhuquan*).”<sup>111</sup> In this series, sovereignty maps directly onto capital: sovereignty is sovereignty *over* and *of* capital. Sovereignty simply means occupying the structural position of the owner of capital. The nationalist problem of sovereignty is directly, immediately, and formally a problem of capital.

National economics, then, like economic equilibrium analysis in general (though not necessarily like those natural sciences that developed with reference to equilibria in the late-eighteenth and early-nineteenth centuries),<sup>112</sup> *presupposes* what is really the *end result* of the governmental project that actually comprises it. (This can be mapped onto the relation between the atemporal and the temporal, discussed above.) Its analytical tools are not designed to explain historical forms, nor to describe a present reality, but to measure divergences from an ideal condition, and then to gear interventions into a social formation according to the possibilities within it of lessening this divergence.<sup>113</sup> The subject of this process, in both the grammatical and the metaphysical senses—what it is the process *of*—is the nation in its atemporal, transcendental ideality. This operation may be one of the key ways that nations take on the appearance of transcendental ideality in the first place.

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111China Neizhengbu, *Minguo shiqi nian ge sheng shi hukou diaocha tongji baogao*, 1931: 1.

112See above, p. 192, n. 7.

113In this respect, the function of economic equilibrium in this project is not entirely unlike the function of the *imago* in Lacanian psychoanalysis (at least at a certain stage in Lacan's development), as a projected image of wholeness and coherence to which a necessarily neither whole nor coherent subject attempts throughout life to approximate; see “The Mirror Stage as Formative of the Function of the *I* as Revealed in Psychoanalytic Experience,” first delivered as a lecture in 1949 and collected in *Écrits*, 1966. For the complete English language edition of the *Écrits*, see Lacan, 2006.

“HARMONIZING LABOUR AND CAPITAL”

'Nothing is more precious than peace among those living together' — true. But that doesn't apply to everyone. Suppose our cook or our maid started getting cheeky? Would you make peace, or would you put them in their place?

— Mao Dun, “A True Chinese Patriot,” 1936

Another key trope of nationalist governing was the “harmonization”, “mutual adjustment,” or “equilibration of labour and capital” (調節勞資 *tiaojie lao-zi*). It may appear, in this case as in others,<sup>114</sup> that such a usage—the centrality of the term 調節 *tiaojie*, which has a long provenance in imperial-era governmental thought—links nationalist governmentality to imperial Chinese statecraft, so that the former could be seen as an autonomous development of the latter. But here again, this is not at all the case. First of all, on a terminological level, 勞 *lao* (labour) and 資 *zi* (capital) were never *tiaojie*'d in imperial China. One simply cannot find this formulation anywhere. Secondly, the purpose of equilibrating labour and capital in the Republican period was to facilitate the maximum possible formation of value, the transfer of material from nature to society through the intermediary skein of the population, that is, the greatest possible accumulation. In the statecraft tradition, the function of something like “equilibration” was, on the contrary, to *prevent* accumulation toward any one node in the system, and neither nature nor society were fundamental categories in any case.

If my description of this form of knowledge is correct, then class antagonism can only appear within it as a pathology, as a body working against itself. (Thus, the analysis here does not operate at the level of morality but of epistemology.) Out of it arose both a poetry and a technics of “the concord of classes.” I think we can say, somewhat schematically, that the general idea of a fundamental harmony of interests at the level of the nation, according to which

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114 See the discussion of “storing wealth among the people” (藏富於民 *cangfu yu min*) with reference to Ma Yinchu, above, p. 135.

class antagonism is the product either of shortcomings in the internal organization of an economy or of the penetration of foreign elements—in any case, according to which class antagonism is incidental rather than essential, a symptom to be diagnosed rather than a condition of existence—has developed since the early nineteenth century along two lines, which are analytically if not historically separable: a poetic-ideological line, which emphasizes the primordial, atemporal unity of a people, its togetherness under a common sign and destiny, and a machinic-technical line, which emphasizes the higher mechanical unity embodied in a technical division of labour within an enterprise. The first line would run through mid- and late nineteenth-century German economic nationalists (from Friedrich List through Wilhelm Roscher, 1817–1894, to Gustav von Schmoller, 1838–1917, and Werner Sombart, 1863–1941), the Russian narodniki (chiefly Alexander Herzen, 1812–1870, and Alexei Khomyakov, 1804–1860),<sup>115</sup> Indian economic nationalists like Rabindranath Tagore (1861–1941),<sup>116</sup> the *swadeshi* activist Bipin Chandra Pal (1858–1932),<sup>117</sup> and the rather lesser known Radhakamal Mukerjee (1889–1968),<sup>118</sup> and finally, Sun Yat-sen. The second would run through the founders of “management science” like Andrew Ure (1778–1857), the aforementioned Charles Dupin (1784–1873), and Charles Babbage (1791–1871), to Robert Owen (1771–1858) in Britain and Henry Carey in the US, the *narodniki* economists V.P. Vorontsov (1847–1918) and N.F. Danielson (1844–1918) in Russia, Taylorism, and the neoclassical economics I have treated above. Both of these lines powerfully converged in Chinese economic nationalism in the 1920s and 30s.

If feudalism and imperialism appeared as external intruders, it was nevertheless the case that they had to be recognized, in some sense, as economic agents. But there was one externality

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<sup>115</sup>Walicki, *A History of Russian Thought: From the Enlightenment to Marxism*, 1979: 428–429.

<sup>116</sup>Goswami, *Producing India*, 252–253.

<sup>117</sup>*Ibid.*, 256 and 263–264. Goswami cites an indicative formulation of Pal's: “An organism is logically prior to the organs,” which terms designate India and Indians respectively.

<sup>118</sup>See *ibid.*, 237 on Mukherjee's intellectual debt to Sombart in particular.

that defied explanation: communism. A threat that, like Jews in Europe, was figured as a single enemy that conjoined *both* non-national threats to the nation: the sub-national—peasants with their backward-looking and locally-oriented idiocy, the amorphous but nonetheless absolute threat they embodied if they weren't properly constrained—and the supra-national—the “global communist conspiracy,” especially the conspiracy directed “from Moscow” by the Comintern. After the split between the Guomindang and the Communist Party in 1927, no sacrifice was too great against this enemy, and the “capitalism with a human face” represented by the rural reconstruction movement finds its necessary correlate in the vast military and police suppression of the communists.<sup>119</sup> The key difference, I suggest—the difference that explains why the Nationalists under Chiang Kai-shek were so wishy-washy, even deferential, with respect to landlords and imperialists and so absolutely resolute with respect to communists—is that the former share the basic logic, but ascribe it to different agents, while the latter reject the logic as such. While feudalism and imperialism could appear as the legitimate pursuit of interests that happened not to be China's own, communism could only appear as willful perversity.

### CONCLUSION

A reader well-versed in Republican history will have noticed that I am subsuming into the same category writers and activists traditionally divided by the right/left distinction: Chen Changheng, Fang Xianting 方顯廷 (H.D. Fong), and He Lian 何廉 (Franklin L. Ho) on one side, Feng Hefa, Chen Han-seng, and Xue Muqiao on the other. By no means was the schematization of the economic that has been the subject of this chapter the exclusive prerogative of the traditionally-

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<sup>119</sup>The massacre in Shanghai on April 27, 1927 is only the first and most famous incident in a months-long suppression campaign (on of many “White Terrors” in the twentieth century) that killed an estimated half a million communists and suspected communists (on this, see Meisner, *Mao Zedong: A Political and Intellectual Portrait*, 2007: 46, 52). And then, of course, there are the encirclement campaigns of the early to mid-1930s that killed millions more.

conceived right during the Republican period. A whole influential stream of Marxism argued precisely that capitalism's ultimate failure was (is) not just its structural inability to eliminate irrationalities of factor allocation but, even more, the structurally necessary way in which it continually produces such irrationalities (for instance, the growing contradiction between the development of the forces of production and the social relations of production).<sup>120</sup> The argument, then, is that socialism can manage *better* the field that capitalism reveals as constitutive of the economic as such, including its populationist aspect. The basic schematization of the field is accepted. On the other hand, *within* each party, seemingly profound political and social differences arose over what to do about the problem of surplus population, some arguing that birth control—Neo-Malthusianism—missed the point and could only diminish China's labour supply further, others arguing that, given the present circumstances, it was, if not the only viable option, then at least one necessary avenue of attack. But all discussion of the population basically took place within these co-ordinates (and if one was not working within these coordinates, one generally didn't talk about the population). The lines of movement and activity laid down by the problem of population did not follow divisions of ideological or party adherence. People at very different positions on the political spectrum could be temporarily or permanently united by them, and people closely gathered together in ideological terms could equally be divided by them. The field of governability whose avatar in this dissertation has been the population problem is not derivative of other political forces of alliance and division; it played its own structural role in renetworking the social field. (One might suggest that this non-conformity to established or recognized distinctions plays a role in its invisibility to most understandings of this period—that is, in why this dissertation wasn't written long before now.) The field of governability defined by populationism, then, is not “essentially” Malthusian or

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<sup>120</sup>This will be absolutely crucial to understanding the development of biopolitics in the People's Republic after 1949.

Neo-Malthusian, or eugenic (so that, in being anti-Malthusian or anti-eugenic, one is thereby non-populationist). It is the set of coordinates in reference to which these arguments *can exist*. This also explains why Malthusianism and eugenics have played such a minor role in the discussion thusfar: as targets, they are altogether too easy. Everybody is prepared to disavow them (or at least most people are); less so public health or cooperatives. But in disavowing them, one does not thereby disavow the biopolitical field. It may be that one has just moved to another position within it.

Placing the population at the foundation of society and of production, as the point of transit between nature and society, far from being an incontrovertible necessity if we are to have any knowledge of “the economic” at all, is rather an artefact of a capitalist world-episteme, whose practical correlate is political economy, understood here not as a variety of theories of the economy but as a set of techniques of governing. This should in no way be understood to mean that it is not a “real” knowledge; the matter turns rather on the question of why this particular knowledge should exist. It is, in fact, the very basis of capitalist governmentality, which is nothing other than the cyclical relating of a set of qualitatively diverse particulars by means of their common embodiment of a quantitative general equivalent, under the sign of the twin axioms of accumulation and efficiency. Capitalist forms of life are not instruments by which nations found themselves, or by which nationalist projects succeed. On the contrary, nations and nationalist projects (including state-building and population management) are means by which capital establishes itself as the matrix of social life. This remained true after 1949, when the conflict between the Nationalists and the Communists was, as it were, introjected into the PRC party-state, as the ongoing conflict between those who saw the principle task as developing the national economy, and those who saw it as revolutionizing the relations of production. I will return to this shortly.

THE POPULATION AS THE SUBSPACE OF GOVERNING

Throughout this dissertation, I have tracked the formation in the Republican period of linkages between previously separate or non-existent arenas of governmental action in China, and the organization—scattered and incomplete, certainly—of technologies and knowledges around those linkages. To cite just a few examples: between forms of family life and changes in the organization of production (Chapter One); between levels of maternal health and childrearing practices and rates of national (racial) economic and social development or “progress” (Chapter Two); between the distribution of the population and the distribution of capital, and the function of a central bank in correcting problems in both (Chapter Three); between analytically discrete scales of an environment—micro (that of microorganisms), meso (the human body), and macro (the population)—and the variety of temporalities that are discovered to operate in it (Chapter Four); and between mortality rates and the possibilities for capital organization and development that institutions like insurance companies represent (Chapter Five).

These linkages were, as I've shown, made by particular people in a variety of situations and institutional settings. They did not all know each other,<sup>1</sup> and if one were to describe to them the substance or ground of their activities in the terms that I have, many of them would not recognize themselves in that description. But collectively, they produced a situation in which, by 1930, one effectively could not *not* govern without reference to the population. Around each of these linkages was established both an institutional apparatus and a knowledge, and the mechanism of their interconnection was the common presence in all of them of the population

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<sup>1</sup> The situation is very different in the late 1970s, as I will show below.

as a central problematic. The population very rapidly came to function as the “subspace” of the set of problems facing people engaged in governing in the Republican period, the way one could move from one problem to another without actually having to go anywhere.

I could have written an intellectual history of conceptualizations of the Chinese population or debates about it: how (some) Chinese people “got it,” how they translated this concept, how they understood it. But this would hardly have done justice to the real distribution and reorganization of governmental capacity in this period that occurred under the sign of the population. Alternatively, I could have taken one or another of the sites in which governmental activity is generally recognized to occur, like public health, or the economy, or culture, and tracked how it was changed by the installation of the population problem within it. But what then of all the other places? What of the fact that the people who are introducing these changes into a given area of social life are also, at other moments or even, and more importantly, in the same moment, introducing changes in a number of others as well? It is difficult to find discussions of the population in the Republican period that do not identify the family as a key lever for a system of population management, and equally difficult to find discussions of the family that do not cite the population as one of the central problems that family reformism has to solve. And neither was ever really discussed or treated in any substantive way without the question of a national economy, of “national wealth and power,” being absolutely central. At the level of governing, then, the problems of the population, the family, and the economy were co-constituted in China. Hence, the population–family–economy nexus. The problem of governing a population did not arise within any particular site of governing, and it was not derivative of a quest for modernity; it was the effect of a transformation of the general system of governing. Rather than ask what these people wanted to do or what they said they were doing, then, I have focused rather on what they couldn't not do. The apparatus within which they operated appeared

to them to have the character of a terrible necessity, in the face of which they had no option but to submit themselves to it. It presented them with laws that were “severe and without human feeling” (酷而不仁 *ku er buren*), as Chen Changheng put it in the context of a discussion of “Malthusian laws.”<sup>2</sup>

This transformation can only be understood with reference to the particular nature of China's involvement with the truly global reorganization of governing associated with the deepening and broadening of the capitalist world-economy in the first decades of the twentieth century. How were these knowledges and techniques getting into China, after all? It happened through two related processes: first, the global dispersal of a corps of professionals, students, and functionaries whose job was to learn what the advanced capitalist countries had that China lacked, and then bring it back to China; and second, the formation in China of all manner of concrete links to governmental and scientific projects that were being elaborated at a global scale in this period for the first time. In addition to the description of concrete projects in China, I have also been concerned to trace out this increasingly dense and regular web of global connections *vis-à-vis* the governmental and scientific aspects of everything that's going on in China. Some of the key sites in which these connections were made were the following:

1. University programs in the sciences and social sciences and fellowship systems
2. International bodies and regulatory systems like the International Sanitary Conferences and the League of Nations Health Organization
3. National and international professional associations like the American Economics Association and the International Statistical Institute
4. Global social movements like cooperativism, feminism, and around the “social question”
5. The global laboratory system: the network of Pasteur Institutes, Institutes for Infectious Diseases, and national public health laboratories
6. State programs for importing foreign expertise: visiting professorships, advisory positions in state agencies, and the like

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2 Chen, *Zhongguo renkou lun*, 1918: 4.

7. Specialized, “problem-based” organizations like the Rockefeller Foundation and the Institute for Pacific Relations

Through these channels, networks, and institutions, China was being dispersed into a global field, on one hand, and phenomena that belong properly to global processes were being installed right at the core of China, on the other hand. If it seems difficult to specify what's “Chinese” about this and what's “foreign,” that's just the point: that's exactly what was in question in just this period.

The reorganization of national-economic governing around the population–family–economy nexus can be detected in many other places in this period.<sup>3</sup> In fact, the form of governing that I've described is, I think, broadly constitutive of bourgeois nationalism as such. If nationalist projects all over the world in this period were staking their claims to sovereignty on the basis of their putatively unique and primordial characteristics, these claims were made by means of, and made possible by, a conceptual and technical apparatus that was both absolutely universal in form and completely new. This apparatus was defined by the interplay between a notion of population that operated at a universal level and the *Chinese* population, which was a particular national instance, a section, of this universal category. As I've argued,<sup>4</sup> the Chinese population—or any given actual population—is substantively unique, but it is formally identical

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3 This claim is authorized by, among others, the following works, many of which have been cited above in relation to particular problems, even if the authors do not describe the results of their research in exactly these terms: Dipesh Chakrabarty, “The Difference–Deferral of a Colonial Modernity: Public Debates on Domesticity in British Bengal,” 1997; Manu Goswami, *Producing India: From Colonial Economy to National Space*, 2004; Rahul Nair, “The Discourse on Population in India, 1870–1960,” 2006; Mytheli Sreenivas, *Wives, Widows, and Concubines: The Conjugal Family Ideal in Colonial India*, 2008; and Rochona Majumdar, *Marriage and Modernity: Family Values in Colonial Bengal*, 2009 (for India); Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, and Modernity*, 2002; Amy J. Johnson, *Reconstructing Rural Egypt: Ahmed Hussein and the History of Egyptian Development*, 2004; and Omnia El Shakry, *The Great Social Laboratory: Subjects of Knowledge in Colonial and Postcolonial Egypt*, 2007 (for Egypt); Cyrus Schayegh, *Who is Knowledgeable is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900–1950*, 2009 (for Iran); and Florencia Mallon, *Peasant and Nation: The Making of Postcolonial Mexico and Peru*, 1995; and Guillermo Palacios, “Postrevolutionary Intellectuals, Rural Readings and the Shaping of the 'Peasant Problem' in Mexico: *El Maestro Rural*, 1932–34,” 1998, for Mexico.

4 See above, p. 69–70.

to any other population. It is similar with the family: even though families all over the world display a bewildering variety of more or less accidental or “merely historical” phenomena, the form of their immanence to the population and to the economy is, for all intents and purposes, universal. Population management is part of a form of governing that operates through the relationship between the particular and the universal, the concrete and the abstract, working on and seeking to transform the former by means of and on behalf of the ways in which it embodies the latter.

### THE REBIRTH OF THE CHINESE POPULATION

For all the efforts of the subjects of this dissertation, though, China was no blank sheet of paper. It was a very thick, dense, and unstable social field, and it would have taken a great deal of work (and probably a lot of luck) to implant a population in it, even if only virtually. In fact, the Nationalists never really succeeded in this project: China fell away from them faster than they could get a grip on it. The successful—and eventually, very deep indeed—implantation of a population into China was to be the accomplishment of the Communist party-state. But not after 1949; rather, since the late 1970s. The timing is crucial to a clear understanding of this.

I have argued throughout this dissertation that the emergence of the Chinese population is inseparable from the development of broadly capitalist governmental techniques, and that these techniques impart to it the features of a commodity. In a way, this dissertation has also been an attempt to write the “pre-history” of the one child policy—officially referred to as the “birth planning policy” (計劃生育政策 *jihua shengyu zhengce*)—and the truly massive apparatus of “comprehensive management” (綜合治理 *zonghe zhili*) of the Chinese population that it has developed into.<sup>5</sup> So, I will conclude by addressing certain interpretive questions concerning the

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5 The most comprehensive treatments of this development are Susan Greenhalgh and Edwin A. Winckler, *Governing China's Population: From Leninist to Neoliberal Biopolitics*, 2005, and

relation of the one child policy, first, to what is called population management in the Maoist period (1949–1976), and second, to other major reforms that were launched in the same brief period, between 1979 and 1981: enterprise management reforms and the correlated recommodification of labour-power, and the household contract responsibility system in the agricultural sector.

On the first question, some scholars have argued that biopolitics was a constant feature of the socialist project in China, and that the one child policy represents a relative shift of position within a field of options, a technocratic hardening, to be sure, but one that was nonetheless consistent with the longer trajectory of population management in the PRC. On the second question, the general understanding has been that the one child policy is anomalous, out of place, or paradoxical in relation to the general trend toward economic liberalization embodied in the other reforms. Certainly it was “excessive.” But there is another way to approach the matter, which turns on the function of value in socialist planning. Rather than assessing policies according to how well or how poorly they manage the “conflicting requirements” of state policy in terms of the schematic opposition between necessity and justice, we can ask how they are reciprocally organized and how they issue from and engender a common field of governability. I wish to show two things:

1. That the one child policy is discontinuous with population management between 1953—when the first Five-Year Plan was launched and the “household registration” (戶口 *hukou*) system began to be implemented<sup>6</sup>—and 1979—when the major policies of the

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Greenhalgh, *Cultivating Global Citizens: Population in the Rise of China*, 2010.

6 The system was extended nation-wide in 1958. On the origins and development of the *hukou* system, the various and important ways in which it structures and organizes Chinese society, and its function in terms of economic planning, see, among other works, Tiejun Cheng and Mark Selden, “The Origins and Social Consequences of China’s *Hukou* System,” 1994; Kam Wing Chan, *Cities with Invisible Walls: Reinterpreting Urbanization in Post-1949 China*, 1994; Kam Wing Chan and Li Zhang, “The *Hukou* System and Rural-Urban Migration in China: Processes and Changes,” 1999; and Han Dongping, “The *Hukou* System and China’s Rural Development,” 1999. The use of the term *hukou*, which was used to refer to the number of people in imperial China, does not mean that the PRC household registration system is a return to past systems of governing, but it is also the case that it is not biopolitical in the sense in which I am using the term.

early Reform period began to be implemented; and

2. That it is absolutely continuous, at the level of the field of governability, both with the population management techniques that I've described throughout this dissertation and with the other major early Reform period policies.

The politics and realignments within the central party-state apparatus between Mao's death in September 1976 and the famous Third Plenum of the Central Committee (中央委員會 *Zhongyang weiyuanhui*) of the CCP in December 1978, which directed the party-state system toward the achievement of the Four Modernizations (四個現代化 *si ge xiandaihua*) and placed Deng Xiaoping 鄧小平 (1904–1997) and Chen Yun 陳雲 (1905–1995) in positions of party leadership, have been fairly well covered, and for all their importance to the reemergence of biopolitical governing in China, they are not my principal interest here. My interest, relatively narrow, is how a provisional resolution of a particular debate supposedly “internal” to Marxism—the “law of value debate” (價值規律的論爭 *jiazhi guilü de lunzheng*)<sup>7</sup>—produced the *entré* for the reinstallation of properly capitalist forms of governing in China, a reinstallation of which the one child policy was an integral part.<sup>8</sup>

Some scholars have noted (quite correctly, on one level) that precursors to the one child policy can be found as early as 1971, with the “later, longer, fewer” (晚稀少 *wan, xi, shao*) campaign, launched in 1971, and Zhou Enlai 周恩來's (1898–1976) injunctions from the mid-1970s to “grasp together [under socialist planning] the two kinds of production” (兩種生產一起抓 *liang zhong shengchan yiqi zhua*)—that is, economic production and the reproduction of the

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7 The principal venue for this debate was the crucially important journal *Economic Research* (經濟研究 *Jingji yanjiu*), which was the public forum for most high-level theoretical debate regarding economy and planning in China. *Red Flag* (紅旗 *Hongqi*) and *Planned Economy* (計劃經濟 *Jihua jingji*) were also important media for the debate, but the critical importance of *Economic Research* (not just its content but its institutional position and function as well) in the coordination of the shifts in question here will become clear.

8 Recall the importance I attributed in the previous chapter to Ma Yinchu's claim in 1935 that “the sole and proper object of economics is value” (see above, p. 204).

population.<sup>9</sup> While the so-called “Gang of Four” (四人幫 *si ren bang*) and Chen Boda 陳伯達 (1904–1989) were still in control of much of the party-state apparatus through the mid-1970s, preparations for the shift in question were nonetheless underway in several places prior to September 1980, when the one child policy was implemented. From 1977, the gathering of institutional capacity to the institutions from which the policy would issue proceeded rapidly.

In 1974, for example, an Office of Population Theory Research (人口理論研究辦公室 *Renkou lilun yanjiu bangongshi*, OPTR) was established at the Beijing College of Economics (北京市經紀學院 *Beijing shi jingji xueyuan*). The journal *Population Research* (人口研究 *Renkou yanjiu*) commenced publication in January 1977. The principal staff of the OPTR—Liu Zheng 劉錚 (1930–1993), Wu Cangping 鄔滄萍 (b. 1922), and Zha Ruichuan 查瑞傳 (1925–2001)—was subsequently transferred in 1978 to the Chinese People's University (中國人民大學 *Zhongguo renmin daxue*) to establish the Institute for Population Research (人口研究所 *Renkou yanjiu suo*, IPR) under the Directorship of Liu Zheng. In May 1979, a symposium on population theory was convened that included representatives of the Institute for Economic Research (經濟研究所 *Jingji yanjiu suo*) under the State Planning Commission (國家計劃委員會 *Guojia jihua weiyuanhui*, SPC), the Editorial Board of *Economic Research*, the State Statistical Bureau (國家統計部 *Guojia tongji bu*), the Family Planning Office (計劃生育辦公室 *Jihua shengyu bangongshi*) under the State Council (國務院 *Guowuyuan*), the Commission on National Development (國家發展委員會 *Guojia fazhan weiyuanhui*), and Liu Zheng and Wu Cangping from the IPR.

It was proposed at this meeting that, given the successes attained in lowering the birth rate of the Chinese population since the beginning of the “later, longer, fewer” campaign in 1971,

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9 See especially Tyrene White, *China's Longest Campaign: Birth Planning in the People's Republic, 1949–2005*, 2006.

research in population theory should be placed on a permanent institutional foundation, which led to a rapid expansion in the number of university and state centres devoted to the study of the Chinese population.<sup>10</sup> In this period, the information control and missile systems theorist Song Jian 宋健 (b. 1931) and his team at the Seventh Ministry of Machine Building (第七機械工業部 *Di qi jixie gongye bu*) were developing the population projections that would lead eventually to the “hard” approach of the one child policy, through their presentation to and sponsorship by leading economic planners like Xu Dixin 許滌新 (1906–1988), to whom I will return in more detail below.<sup>11</sup> The Chinese Demographic Association (中國人口學會 *Zhongguo renkouxue hui*) was reconstituted in 1981; Ma Yinchu, ninety-eight years old at this point, was rehabilitated after languishing in obscurity since 1961 and became its Honorary President. These developments are all important, but they are not, I argue, where the really crucial transformation occurs.

One of the longest standing theoretical issues concerning those who govern “actually existing socialisms” is the correct management of existing contradictions between the forces and the relations of production, and how to determine correct policies for moving through the stages of transition from socialism to communism, at which point the contradictions in their respective development would be resolved. If, under capitalism, the forces of production develop to the point where capitalist relations of production act as a fetter to their further development, the situation is, in a sense, reversed under a system of state socialism in an economically relatively underdeveloped country or set of countries. Here, the undeveloped state of the forces of production act as a fetter to the further development of the relations of production, which are

10 *Renmin ribao* 人民日報 (*People's Daily*). “Renkou lilun zuotanhui jieshao 人口理論座談會介紹 (Report on the Population Theory Symposium),” June 5, 1979; H. Yuan Tien, “Demography in China: From Zero to Now,” 1981: 685; Susan Greenhalgh, “Population Studies in China: Privileged Past, Anxious Future,” 1990: 362.

11 This has been most fully explored in Susan Greenhalgh, *Just One Child: Science and Policy in Deng's China*, 2008.

now the “advanced” term. The forces of production must catch up, so that the contradiction can be resolved.<sup>12</sup> But how should economic planning occur such that this can happen? If one was supposed to be steering the ship of state toward communism, how could one know what stages lay along the way, and whether and when one was reaching and surpassing them? Two possibilities existed: either the stages were defined by the primacy of different sets of class relations, or by levels of development of the forces of production. In 1936, Stalin announced that, in terms of class relations, socialism had been “basically achieved,” and that further progress through the stages to communism would be marked by the attainment of determinate levels of development of the forces of production. Basically, this defines the position of the “developmentalists” within the CCP, who felt that China had entered a similar situation by the mid-1950s.

Clearly, some kind of national and enterprise accounting system was required in order to be able to allocate economic resources on a regular and constant basis according to the goals set

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12 This line of argument ultimately derives from Stalin's “Dialectical and Historical Materialism,” 1938 (collected in *Problems of Leninism*, 1976), where he argues that, given the achievement of socialism in terms of class relations, the task facing the Party is “to promote the progress of industry and agriculture in order to improve the material and cultural standards of the workers, peasants, and intellectuals.” This is exactly the position taken (again) in 1978 in China. This same formulation structured arguments made at the Population Theory Symposium, discussed above: “If population growth is too rapid ... it will act as a fetter to the improvement of the material and spiritual-cultural life of the people (人民物質生活和精神文化生活的改善 *renmin wuzhi shenghuo he jingshen wenhua shenghuo de gaishan*)” (*Renmin ribao* 人民日報, June 5, 1979). The issue here is emphatically *not* whether any of these positions are “correct” or not, nor whether they advance our understanding of economic processes in a socialist system or not. Rather, it is the way in which what is basically a relative realignment of positions within an “internal” socialist debate opens the door to an absolute or qualitative shift in the nature of governing in China. This is possible because socialist theory has not heretofore been able to account for the positive reality of technologies of governing, their direct and productive rather than indirect and reflective role in the organization of social life, seeing them rather as instrumental to the project of enacting a socialist program or derivative of “deeper” realities like economic laws or class struggle, which are the true site of operations. On this absence of a specifically socialist governmentality, see Foucault, *The Birth of Biopolitics*, 2008: 93–94. There, he argues that the absence of reflection on governing in the socialist tradition goes a long way toward explaining the ease with which socialist organizations embrace neoliberal governmental techniques. His specific case is the Social Democrats in Germany in the context of the “social market economy,” but his analysis applies as well, I think, to China in the late 1970s.

by economic planning, but how should it be organized?<sup>13</sup> The debate concerned the operation of the law of value (in Marxist terminology, the law that the value of a commodity is determined by the amount of socially necessary labour-time expended in its production, which is intrinsically linked to the problem of labour productivity) in a capitalist economy, and the possible utility and function of this law in socialist planning. That is, in a context in which commodity production is supposedly dying out, and in which labour-power has been or is being subtracted from the set of things whose value enters into economic calculations.

Under a capitalist system of generalized commodity production and in the absence of central planning, the law of value—where it was given free reign—operated automatically to distribute social capital in such a way as to maximize the development of the productive forces. But a socialist economy was supposed to be precisely a non-commodity economy, where distribution occurred according to social needs rather than the mechanism of value and productivity. Or at least a socialist system was supposed to negate progressively the social relations that correspond to a commodity (capitalist) economy. So, what could the function of the law of value be within a system of socialist planning? Did a socialist economy have its “own” laws of economic development, or was the law of value an “objective economic law” (客觀經濟規律 *keguan jingji guilü*) pertaining to all productive activity as such?<sup>14</sup>

The debate in the PRC went back to the mid-1950s, when planners were trying, after the period of initial post-war reconstruction and in the process of evaluating the first Five-Year Plan, to determine the developmental path China should take. That is, whether they should emulate

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13 These problems and their effects on the organization of statistical work in the early years of the PRC are the subject of the current research of Arunabh Ghosh at Columbia University.

14 In fact, the question of whether objective economic laws existed and the question of whether the law of value was one of these laws constituted a single question, since everybody who argued that there were such laws also argued that the law of value was one of them. Indeed, that it was the most important one, and that planning for national economic development could do nothing but subordinate itself to it.

the Stalinist model of the Soviet Union or come up with a solution more closely related to the realities of China's situation at the time. The issue arose again during and in the aftermath of the Great Leap Forward, when the need arose, first, to account for its results and, second, to grasp the situation in the rural sector after its collapse. The central advocates of the position that the law of value *was* an objective economic law, and thus of making value the basis of national accounting and planning, were none other than Xue Muqiao, whose studies of rural surplus labour-power while associated with the Rural Studies Institute I looked at in the previous chapter,<sup>15</sup> who became a senior economic planner in the early 1950s under Chen Yun, serving as Deputy Director of the State Planning Commission and Director of the State Statistical Bureau, among other positions;<sup>16</sup> Sun Yefang, who was also a co-founder of the Rural Studies Institute in 1933 where he worked closely with Xue, and similarly served as Vice-Director of the SSB and Director of the Institute for Economic Research (經濟研究所 *Jingji yanjiusuo*) at the Chinese Academy of Sciences (中國科學院 *Zhongguo kexue yuan*); and Xu Dixin, a graduate of the National Labour University, also discussed in the previous chapter in connection with the work of Feng Hefa,<sup>17</sup> who served in the early 1950s as Director of the Institute for Economic Research at Fudan University (復旦大學 *Fudan Daxue*) in Shanghai and then Director of the Central Private Enterprise Bureau (中央私營企業局 *Zhongyang siying qiyeju*) in Beijing.<sup>18</sup>

After 1963, the topic disappeared from academic discussions until 1977, when these same

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15 See above, p. 216–217.

16 He was purged during the Cultural Revolution for his advocacy of market economics and close association with Deng Xiaoping.

17 Above, p. 231.

18 The basic reference points for practically all participants in the debate were Stalin's *Economic Problems of Socialism in the USSR*, published in 1952 and translated into Chinese in 1953, especially Chapter Three, “The Law of Value under Socialism”; Marx's *Capital I* (obviously), and to a lesser extent, the *Grundrisse*; and Engels' *Anti-Dühring* of 1877, especially Part III: “Socialism.” Rather than cite here all of the many texts through which this debate was conducted, I refer the reader to the entries in the Bibliography for Xue Muqiao, Sun Yefang, Xu Dixin, Wang Ya'nán 王亞南, Nan Bing 南冰 and Suo Zhen 索真, Wang Xuewen 王學文, and Zhu Jiannong 朱劍農.

economists were (re)placed, in the immediate post-Mao period, in pivotal positions of theory and policy formation. Xue Muqiao was appointed Secretary of the Center for Economic Research (經濟研究中心 *Jingji yanjiu zhongxin*) under the State Council, Director of the Institute for Economic Research under the SPC, and to the Financial and Economic Commission (財政經濟委員會 *Caizheng jingji weiyuanhui*) of the National People's Congress (全國人民代表大會 *Quanguo renmin daibiao dahui*). Xu Dixin was appointed Vice-Chair of the Chinese Academy of Social Sciences (中國社會科學院 *Zhongguo shehui kexue yuan*, CASS) and Director of the Institute for Economic Research under it. Shortly afterward, in early 1978, Sun Yefang was appointed as an Advisor to the Center for Economic Research and the Chinese Academy of Social Sciences, as well as Honorary Chair of the Institute for Economic Research at CASS. The group also took control of the Editorial Board of *Economic Research*.

They argued, again, that since China's forces of production were undeveloped relative to the relations of production, the main task facing planners was the development of these forces of production, or total social capital. Such development could not be coordinated if the bulk of the country's productive forces were not subjected to any form of economic accounting. Having been authorized to develop the policies they had been severely criticized for during the Cultural Revolution, they spent the next year working out how to make the law of value the basis of national economic accounting.<sup>19</sup> Eight months prior to the symposium on population theory discussed above, and at a higher level in the hierarchy of state organs, Xue Muqiao and Sun Yefang organized and presided over an ongoing symposium in Beijing that gathered together “economic theory workers” (經濟理論工作者 *jingji lilun gongzuozhe*) from all of these

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19 In the process, they contributed powerfully to the rapid dismantling of university programs in Political Economy and their replacement by Departments of Economics. On this, see Cyril Lin, “The Reinstatement of Economics in China Today,” 1981, and Bill Brugger and David Kelly, *Chinese Marxism in the Post-Mao Era*, 1990: 97.

organizations for theoretical and policy discussions.<sup>20</sup> This work culminated in a special supplementary issue of *Economic Research* devoted entirely to the law of value,<sup>21</sup> and the shift in accounting policies that created the *entré* for the reimplantation of the population at the core of Chinese governing.

Prior to the reforms, most enterprise and national accounting—the basis on which remissions of profit to the state were calculated—was conducted on the basis of what was called the “cost profit rate” (成本利潤率 *chengben lirun lü*). In this system, the rate of profit produced by an enterprise was calculated by dividing the surplus value (*s*) produced by the cost of the materials used in production and depreciation (*c*) and the cost of labour or “variable capital” (*v*), which here does not mean wages, but the cost of the goods distributed to members of the enterprise through the work-points system:

$$\frac{s}{(c+v)}$$

Under this system, the bulk of the means of production held by a given enterprise were simply not submitted to economic accounting. This has the effect precisely of making *non-commodities* of a good deal of productive material, since being a commodity is a function of the doubled existence defined by the possession of both use-value and (exchange-)value. As far as national

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20 N.A., “Zunzhong keguan jingji guilü, yong jingji banfa guanli jingji: Zhongguo shehui kexue yuan he benken bianji bu jixu zhaokai zuotanhui 尊重客觀經濟規律, 用經濟辦法管理經濟: 中國社會科學院經濟研究所和本刊編輯部繼續召開座談會 (Respect Objective Economic Laws and Use Economic Methods to Manage the Economy: The Chinese Academy of Social Sciences and the Editorial Department of *Economic Research* Continuing Symposium),” 1978.

21 See Xue Muqiao, “Guanyu jiazhi guilü zuoyong wenti taolunhui kaimuci 關於價值規律作用問題討論會開幕詞 (Opening Address to the Symposium on the Question of the Function of the Law of Value),” 1979; Sun Yefang, “Guanyu jiazhi guilü de neiyin lun yu weiyin lun 關於價值規律的內因論與外因論 (On Theories of the Internal and External Causes of the Law of Value),” 1979. In fact, this was the second time that *Economic Research* had devoted the bulk of its pages to the law of value. The first time was in January and February 1959, just as the Great Leap Forward (1958–1961) was unfolding and the problem of calculating its results arose, especially considering that the universe of value had just shrunken dramatically by the organization of the Agricultural People's Communes (農村人民公社 *nongcun renmin gongshe*) in the immediately preceding years.

accounting was concerned, by being subtracted from the set of things on the basis of which transfers of value were calculated, they effectively did not have value. They did not have that feature that allows them to enter into the relationship of general exchangeability because, under a “whole people ownership economy” (全民所有制經濟 *quanmin suoyou zhi jingji*), they could not be commodities. The same was true of labour-power, since members of an enterprise were the owners of that enterprise, and thus were not paid wages, on the basis that a socialist economy could not be organized by that most characteristic social relation of capitalism. This meant that there was no way to analyze quantitatively the productivity of labour relative to capital.<sup>22</sup>

The crucial shift in accounting practices produced by the proponents of the law of value was supposed to solve exactly this problem. This is the shift to accounting on the basis of “capital profit rate” (資金利潤率 *zijin lirun lü*), calculated by dividing surplus value by the value of the enterprise's *capital* (*C*) and the cost of labour:<sup>23</sup>

$$\frac{s}{(C+v)}$$

With this shift, labour-power—and the population as its bearer—is reentered into a relationship with the means of production as *capital* that is mediated by value.

Of course, economists will (and did) argue that the population and means of production “really” did have and must have had value all along, in virtue of the fact that they could come to have value simply by being accounted for, by a simple shift from one method of accounting to

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22 See Sun Yefang 孫冶方, “Shenme shi shengchanli yiji guanyu shengchanli dingyi wenti de ji ge zhenglun 什麼是生產力以及關於生產力定義問題的幾個爭論 (What is Productivity, and Some Controversies Concerning the Definition of Productivity),” 1980.

23 On this, see Sun Yefang 孫冶方, “Yao lizhi qizhuang zhua shehuizhuyi lirun 要理直氣壯地抓社會主義利潤 (Grasp [the Concept of] Socialist Profit with Confidence),” 1978, included in *idem.*, *Shehui zhuyi jingji de ruogan lilun wenti 社會主義經濟的若干理論問題 (Some Theoretical Issues in Socialist Economics)*, 1979: 362–366. See also K.K. Fung, “Editor's Introduction,” in Sun Yefang, *Social Needs versus Economic Efficiency in China*, 1982: xvii–xviii.

another. But for our purposes, that shift makes all the difference, since the object here is not a true description of economic phenomena but to grasp how governing is oriented and structured by the ways in which phenomena are related to each other. It is not a shift from “having value but that value not being recognized” to “having recognized value.” It is a shift from not having value to having it, a shift that is effected not by any change in the materials themselves, but rather by their inscription into a system of generalized exchangeability. If they are not accounted for, then as far as the governmental practices that proceed from their values are concerned, they are simply null.

A good deal of the question about the possibility of biopolitics thus depends on the seemingly unrelated problem of what is “on the books.”<sup>24</sup> Henceforth in China, with the enterprise management reforms that were launched in the same period, the population would once again be governed *as if it were a commodity*, even if existing forms of enterprise management and relations of production meant that it was not yet *effectively* a commodity. The reforms gave enterprise managers more discretionary power over the allocation of labour-power based on calculations of productivity that were made possible by the shift to capital profit rate accounting. The whole problem of surplus labour-power that I explored in the previous chapter thereby suddenly reemerged as a central problem that governing had to solve, where it had not really been an element of the Maoist development strategy. But this introduced into Chinese governing a contradiction between how the population was grasped by the apparatus of planning (as labour-power) and how it had been positioned in relation to the means of production by the transformations of the 1950s (as owners). The eventual resolution of this contradiction—decisively in favour of the population as the labour-power of a national enterprise—is what is

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24 Recall, in this connection, Chen Changheng's description of vital statistics as “a nation's vital bookkeeping” (see above, p. 136).

referred to as dismantling the “iron rice bowl” (鐵飯碗 *tie fanwan*).<sup>25</sup> The return to calculating profit relative to capital entails a return to the wage, at first only virtually (for accounting and distribution purposes), but eventually really, as management and labour gradually ramify themselves into owners and wage labourers.

The problematic of the Chinese population's “quality” (素質 *suzhi*, although this term could also be translated as “qualities,” in the sense of properties or characteristics) derives from the same source. This notion has escaped, as it were, from its initial connection to economic planning and has implanted itself very deeply into contemporary Chinese social and cultural organization, a process that has been the subject of much and ongoing scholarship.<sup>26</sup> *Suzhi* is one side of the now once again doubled existence of the population, the other side being labour productivity. *Suzhi* and labour productivity are the same thing, related in the first case to the material composition of a population, and in the second case to its engagement with capital through the medium of value. Thus, the *suzhi*–productivity dyad corresponds exactly to the material particularity–general equivalent dyad that we first discovered in relation to Xu Shilian's equations for race efficiency in Chapter Two as the formal structure of life, nature, and capital.

In the rural sector, the mechanism that was supposed to generate this constantly improving productivity was, precisely, the family, through the family or household contract responsibility

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25 On labour and enterprise reforms in the urban industrial sector, see, among other works, Gordon White, “Restructuring the Working Class: Labor Reform in Post-Mao China,” 1989; Lisa Rofel, “Hegemony and Productivity: Workers in Post-Mao China,” 1989.

26 See, for instance, Ann Anagnost, “The Corporeal Politics of Quality (*Suzhi*),” 2004; Yan Hairong, “Neoliberal Governmentality and Neohumanism: Organizing *Suzhi*/Value Flow through Labor Recruitment Networks,” 2003; Andrew Kipnis, “Neoliberalism Reified: *Suzhi* Discourse and Tropes of Neoliberalism in the People's Republic of China,” 1997, and *idem.*, *Governing Educational Desire: Culture, Politics, and Schooling in China*, 2011; and Rachel Murphy, “Turning Peasants into Modern Chinese Citizens: ‘Population Quality’ Discourse, Demographic Transition and Primary Education,” 2004. On the connection between the emergence of this discourse and the re-economization of planning in the early 1980s, see also Alexander F. Day, “State, Market, and Peasant: The End of Peasant Revolution,” 2011. Here, too, interpretations of certain explanatory resources in the Marxist tradition—in this case, debates about the Asiatic Mode of Production—led to the de-subjectification of Chinese peasants as political agents, and their refiguration as objects of administration.

system (家庭聯產承包責任制 *jiating lianchan chengbao zerenzhi*). Xue Muqiao, again, as Director of the Economic Research Office of the State Planning Commission, was instrumental in the extension of this system throughout the rural sector after a period of experimenting with a variety of systems.<sup>27</sup> By 1983, ninety-eight percent of communes had adopted it.<sup>28</sup> Under this system, land and means of production were provided to families in connection with a quota of products that had to be sold to the state at state-determined prices. Anything produced in excess of the quota could be sold on the market, and “the family” (actually the head of the family) was given more decision-making power in terms of the allocation of its (his) labour-power. Given that more and more of the products of the agricultural sector were being distributed through the market rather than through the state, value would come to regulate the distribution of capital and the improvement of productivity to an ever greater degree, and the rural family—now officially inscribed into “the economy” as a unit of accounting—was determined to be the most efficacious means of accomplishing this.<sup>29</sup> Here again, creating a situation in which families can do nothing but increase productivity appears as freeing them to do so, as a relaxation of control. A massive intervention appears as an end to intervention, which is how the impositions connected to the other policy that was to be accomplished through the family—the one child policy—can appear to be paradoxical in relation to it.

Making all due allowance, then, for the many changes that occurred between mid-century and the late 1970s (both in China and in the global populationist apparatus), we can nevertheless observe that the basic triad of early-Reform period policies correspond term by term to the population–family–economy nexus whose first emergence occurred in the second decade of the twentieth century: the one child policy, enterprise management reforms, and the household

27 Joseph Fewsmith, *Dilemmas of Reform in China: Political Conflict and Economic Debate*, 1994: 32.

28 Dalsimer and Nisonoff, “The Implications of the New Agricultural and One-Child Family Policies for Rural Chinese Women,” 1987: 587.

29 On this, see Xue Muqiao, *Chinese Economists on Economic Reform: Collected Writings of Xue Muqiao*, 2011: 67.

contract responsibility system. What links them together as part of a single transformation at the level of a logic of governing is precisely the reinscription of the value matrix into the field of governmental calculation. The interface of the population, production, and the state, here, is value. The shift from cost profit to capital profit accounting dramatically expanded the universe of value in China, the universe in which the concrete is governed by means of the abstract, the universe of the *quantitative*, and thereby of the objective. And it was precisely as a quantitative and objective analysis that the kind of populationism represented by the one child policy was inserted into a socialist governmental project.<sup>30</sup> Thus, the true matrix of intelligibility of the one child policy is not the logic of authoritarianism or of an expansive state, or the prestige of technoscience, but the resubsumption of the population into the category of capital. The one child policy made sense because it became possible again to grasp and govern the population in *exactly* the same way that one grasps and governs an economy, because the objects of practices of governing in both areas were formally identical.<sup>31</sup>

This is not to suggest that economic policy in the Maoist period was unconcerned with accumulation. That would be ridiculous. But what did not exist during the Maoist period—or perhaps, what was kept at bay—was the notion of an immanent relationship between the population as capital and capital-proper as capital. Herein, strictly speaking, lies the Maoist regime's “anti-Malthusianism.” For all the population management that obviously took place in the Maoist period, this aspect was missing, since the *hukou* system was really a police apparatus, not a demographic apparatus. Using population registration to keep track of where people are, to determine their entitlements to state benefits, and to prevent them from moving is not the same

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30 See, for instance, Song Jian and Li Guangyuan 李廣元, “Renkou fazhan wenti de dingliang yanjiu 人口發展問題的定量研究 (The Quantitative Analysis of the Problem of Population Development),” 1980.

31 This is a dimension of the process that Greenhalgh misses, because she cannot see that the formal structure of the object of her own science, demography, is already that of capital.

as using it to determine fluctuations in a natural field, or being able to induce effects at the level of an economy by means of adjustments to the population. As far as planning and accounting was concerned, the universe of the economy, the commodity, and value—the universe of things subjected to economizing—was composed of far fewer things than it would be under the reforms, and hence, the form of governing defined by the operation of value could get a hold on far less of Chinese social life.

The function of the state in distributing this apparatus is clearly very different here than it was in the Republican period. In the Chinese case, as in others, the successful implantation of biopolitical forms of governing required a strong state—or at least a state without internal and external competitors—but that does not mean that what was being implanted has a “statist logic,” nor that the framework of our analysis has to be “state vs. society.” Neither does it mean that the title or name of the state determines the nature of what is installed: just because a “socialist” state does it doesn't mean it's socialist. The starting point for the Reform period, then, is the combination of a return to forms of governing and governmental imperatives whose first iteration in China occurred in the 1920s and 1930s, on the one hand, and the accumulation of state capacity that occurred during the first decades of the PRC, on the other hand.

In certain phases of the Maoist period, at least, it was determined that accumulation had to occur in the context of the ongoing development of socialist relations of production. Believing, apparently, that socialist relations of production had been achieved, and could not be undone, the framers of the Reform period policies implemented a series of measures and a field of governability that, precisely, undid them in the name of a national-economic project. After 1978—as a result of the changes discussed here, and regardless of the intentions of the people involved and the Marxian form of their discourse—the Chinese state, now conceived as a means to accomplish a *nationalist* project (rather than an internationalist one), did not “deploy” capital

in an instrumental way to shore up or expand its own power. It was itself transformed into a machinery of economic optimization, an instrument of the capitalization of Chinese society, and of the regulated unleashing of capital into Chinese life, which is just what all those projects around the family in the early twentieth century, with which I began this dissertation, were instruments of. And with this change comes the Chinese population, again.

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