

FROM BALLISTICS TO DEMOGRAPHY – CHINESE POPULATION CONTROL POLICIES IN HISTORICAL PERSPECTIVE

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China has undergone a transforming demographic transition that, in less than a century, has brought its population from 500 million to 1.340 billion. During this transition, the Communist Party of China (CPC) has tried to shape the demographic trends by implementing a set of pronatalist and population control policies. This paper reconstructs CPC's internal debate on demography by using the perspectives of practitioners and academics involved in the decision-making process. In particular, the historical investigation of this study shines a light on the influence that military scientists had in the planning of the one-child policy.

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In Chinese modern history, demography has been a key factor in shaping the society, economy and government policies. The fast demographic transition of the twentieth century that led the Chinese population from about 400 million to the current 1.340 billion has been both a resource and a burden for China. The Communist Party of China (CPC) took upon the challenge to manage the population growth and over the decades it has implemented several policies set to increase or decrease the fertility rates. Managing a demographic transition requires strict policies and societal control by governments, but more importantly, it requires proper demographic analyses and long-term planning. Due to the totalitarian nature of Chinese political system, the CPC had almost no problems to implement harsh population control policies. However, for many years it lacked demographers and scientific expertise to have a coherent and apolitical debate on population control. Indeed, until the one-child policies implemented in 1978, the CPC fluctuated between pronatalism and population control policies. Until the late eighties, the demographic debate has been ideologically driven by either Maoism or Malthusianism. Indeed, as this study suggests, almost no demographers initially partook to the planning of the one-child policy (OCP).

It is estimated that the OCP has prevented the birth of about 400 million persons¹ and the policy is widely addressed as “the most aggressive, comprehensive population policy in the world.”² It is, therefore, striking to notice that the OCP has been planned by non-demographers under the influence of Song Jian, a military scientist with expertise in ballistic. How is it possible that a military scientist ended up having such a great influence on Chinese demographic history? Why did the Chinese leaders decide to intervene on population growth and follow Song Jian policies? This paper tries to answer these questions by reconstructing with both primary and secondary sources the history of Chinese policymaking process and by trying to evaluate what was the role of leaders, ideologist, academics, and politicians in the demographic debate.

Overall, the study presents a concise literature review and demographic history of China, and it analyses Chinese population control policies focusing on the role played by CPC leaders and Chinese academia. Particular attention is reserved

¹ Yong Cai, “China’s Below-Replacement Fertility: Government Policy or Socioeconomic Development?,” *Population and Development Review* 36, no. 3 (2010): 420.

² Susan E. Short et al., “China ’ S One-Child Policy and the Care of Children : An Analysis of Qualitative and Quantitative Data,” *Social Forces* 79, no. 3 (2001): 913.

to Ma Yin Ch’u and Song Jang; two Chinese scholars who played an important part in the “demographic debate” and CPC’s policy-making.

Literature review

China’s current and past demographic history has been widely analyzed and studied in recent years by a multitude of scholars with different backgrounds, mostly from economics and demography. Moreover, since the nineties, Chinese scholars have been studying extensively domestic demographic trends, see H. Yuan Tien³ or Yong Cai.⁴ Other scholars, such as Xizhe Peng, have focused on quantitative analysis and stochastic prediction.⁵ A smaller group of scholarship has instead focused on evaluating the effects of demographic policies on society, e.g. Hongbin Li, Junjian Yi and Junsen Zhang on sex ratio imbalances,⁶ Xiaoyu Wu and Lixing Li on maternal health,⁷ and Hong Zhang on fertility trends and society.⁸

Regarding the historical analysis of demographic policies, there are few scholars, like Alan R Plotnick⁹ or Kenneth Walker,¹⁰ which have

³ H. Yuan Tien, “Demography in China: From Zero to Now,” *Population Index* 47, no. 4 (1981): 683–710.

⁴ Cai, “China’s Below-Replacement Fertility: Government Policy or Socioeconomic Development?”

⁵ Xizhe Peng, “China’s Demographic History and Future Challenges.,” *Science* 333 (2011): 581–87.

⁶ Hongbin Li, Junjian Yi, and Junsen Zhang, “Estimating the Effect of the One-Child Policy on the Sex Ratio Imbalance in China: Identification Based on the Difference-in-Differences.,” *Demography* 48, no. 4 (2011): 1535–57.

⁷ Xiaoyu Wu and Lixing Li, “Family Size and Maternal Health: Evidence from the One-Child Policy in China,” *Journal of Population Economics* 25, no. 4 (2011): 1341–64.

⁸ Hong Zhang, “From Resisting to ‘Embracing?’ the One-Child Rule: Understanding New Fertility Trends in a Central China Village,” *The China Quarterly* 192 (2007): 855–75.

⁹ Alan R. Plotnick, “Malthus, Marx and Mao,” *Challenge* 12, no. 9 (1964): 9–12.

¹⁰ Kenneth Walker, “Ideology and Economic Discussion in China: Ma Yin-Ch’u on Development Strategy and His Critics,” *Economic Development and Cultural Change* 11, no. 2 (1963): 113–33.

extensively written on the role of ideology in demographic policies. Since this paper focuses on the internal debate of the CPC, it also uses primary sources, including Chinese newspapers’ articles and leaders’ statements and speeches.

Demographics of China and Malthus on pre-revolutionary China

Chinese demography can be divided into three periods, with the first two experiencing moderate population growth and the third almost exponential growth. In the first, from the first century A.D. to 1750, China dubbed its territory and its population grew by three times. In the second, from 1750 to 1950, the population increased by about 150 percent. Lastly, in the third period between 1950 to today, the population grew by more than 200 percent. In other words, the average annual rate of population growth “grew in each period by an order of magnitude, from the ten-thousands during much of the last two millennia to the one-thousands during much of the last three centuries, to the one-hundreds during much of the last 50 years.”¹¹

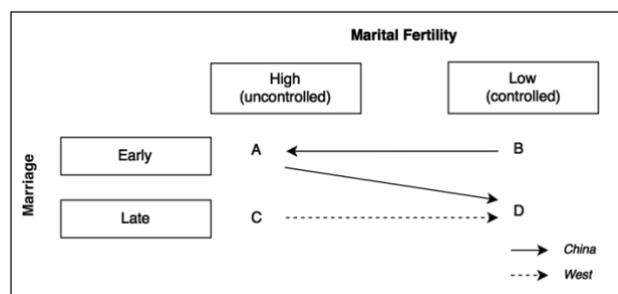
Period	Population (million)
AD 14	73
1000	60
1200	123
1500	100
1750	207
1900	500
1953 (1st census)	582
1964 (2nd census)	694
1970	820
1982 (3rd census)	1,008
1990 (4th census)	1133
2000 (5th census)	1,265
2010 (6th census)	1,339

Tab. 1.¹²

¹¹ James Lee and Feng Wang, “Malthusian Models and Chinese Realities: The Chinese Demographic System, 1700-2000.,” *Population and Development Review* 25, no. 1 (1999): 50.

¹² Tab. 1 is from S. Irudaya Rajan, “China’s One-Child Policy: Implication for Population Aging,” *Economic and Political Weekly* 29, no. 38 (1994): 2502–6. The years in bold are from the official PRC census.

Table 1 summarizes the population growth per period of the Chinese population. As James Lee and Wang Feng point out, to understand the high demographic growth of the last century it has to be assumed that China had a different fertility transition compared to the one that occurred in the western countries.



Chinese fertility transition. Figure.1.¹³

The diagram of figure 1 proposed by Lee and Feng represents the fertility transition of China, which:

*It shifted first from B to A, and only then from A to D. Marital fertility appears to have been low originally compared with pre-modern European populations. But with the rise of economic opportunities in the eighteenth century and the deterioration of familial authority in the twentieth, Chinese fertility control relaxed, shifting the Chinese fertility regime from B to A, that is, yielding a high overall fertility compared with modern European populations [...] this explosion, in turn, generated a collective response: a state decision to reimpose population control by means of a strict family planning program, involving both a demand for later marriage and birth control within marriage, thus moving China from A to D.*¹⁴

As it can be inferred, population growth and overpopulation became an issue only after the second half of the 20th century. For this reason, demography has been widely ignored in pre-

¹³ Lee and Wang, “Malthusian Models and Chinese Realities: The Chinese Demographic System, 1700-2000.,” 56.

¹⁴ Ibid.

revolutionary China, and only a few demographic data were collected at the time. Conversely, in Europe demography developed as a field of study at the end of the 18th century thanks to the social scientist Thomas Robert Malthus. Malthus himself had an indirect and consequential role on Chinese demography. His theories and writings on China became the object of debate during the Maoist era, and later on, they influenced Chinese academics and practitioners.

Malthus did not possess empirical data on Chinese population, but he expressed his perspectives on the country based on deductions and purely theoretical reasoning. Malthus, for example, speculated on the magnitude of Chinese population in his book *An Essay on the Principle of Population*, where he wrote:

*When we are assured that China is the most fertile country in the world, that almost all the land is in tillage, and that a great part of it bears two crops every year, and further, that the people live very frugally, we may infer with certainty that the population must be immense, without busying ourselves in inquiries into the manners and habits of the lower classes and the encouragements to early marriages.*¹⁵

For Malthus fertility was interrelated and dependent on the age of marriage: the earlier the marriage, the higher the fertility.¹⁶ Malthus believed that in the case of China early marriages were common and that therefore China had a high fertility rate (TFR), although he also argued that, as Adam Smith wrote, that population in China is stationary.¹⁷ This situation of stable population with high fertility rates was considered by Malthus

¹⁵ Thomas Malthus, *An Essay on the Principle of Population*, 1st ed. (London: Printed for J. Johnson, in St. Pauls Church-Yard, 1798), 18, <http://www.esp.org/books/malthus/population/malthus.pdf>.

¹⁶ The same causality has been discussed by Hume in an essay “On the Populousness of Ancient and Modern Nations”.

¹⁷ Ibid., 19.

as the output of the work of positive checks¹⁸ on the Chinese population. China for Malthus was a country where the “population increased permanently, without an increase in the means of subsistence.”¹⁹

Malthus saw in China a counterexample to the demographics of the United States and UK. Where the former was characterized by a fast growing population with plenty of resources and no checks, and the later was understood as an “old state” with a slow growth of population balanced by pre-emptive checks. It is important to notice that this Malthusian narrative of the Chinese demographic history has been predominant among Chinese scholars and policy makers. Who, for example, interpreted the famine (三年大饥荒) that followed the Great Leap Forward as a positive check on the population, and, as a response to the famine, they started to consider population control policies for the first time.

With hindsight, it can be argued that Malthus had a negative influence over the first Chinese demographers. After all, his arguments on China lacked empirical verification and were based wrong assumptions. As Lee and Feng argue in “Malthusian Models and Chinese Realities,” nuptiality is not the only parameter to calculate the fertility (as Malthus argues). Indeed, both China and the UK had similar fertility levels and they “differed only in how they managed fertility, the British by controlling marriage and the Chinese by controlling marital fertility.”²⁰ In other words, while the British control of fertility was rooted in individual restraint, the Chinese demographic structure was based on collective control:

¹⁸ By “positive check” Malthus meant all those conditions that by incising the death rate the reduce the population (e.g. a famine). Positive check is the opposite of preventive check which, by using “moral restraint”, lower the birth rate.

¹⁹ Thomas Robert Malthus, *Population: The First Essay*, London: Ann Arbor, 1959, pp. 45-46, as cited in: Arthur P. Wolf and Theo Engelen, “Fertility and Fertility Control in Pre-Revolutionary China,” *The Journal of Interdisciplinary History* 38, no. 3 (2008): 346.

²⁰ *Ibid.*, 347.

*The Chinese demographic system [...] was characterized by a multiplicity of choices that balanced marital passion and parental love with arranged marriage, the decision to kill or give away biological children, and the adoption of others' children. In contrast to the Malthusian paradigm, human agency in China was not restricted to nuptiality. Moreover, it was exercised largely at the collective rather than the individual level. Chinese individuals constantly adjusted their demographic behaviour according to collective circumstances so as to maximize collective utility.*²¹

Lee and Feng argue that, in origin, the family was in charge of collective control over fertility, while, after the transition to A to D (see *Figure 1.*) the state replaced the family.

To conclude, demographics of China has been for a long time explained with a Malthusian logic, and just recently with the development of a native Chinese demography, the discipline has moved away from the binary logic of Malthus theoretical framework to a more scientific approach.²²

Ma Yin Ch’u and Maoist China

The first Chinese debate on population control took place within the CPC during the fifties and sixties. The actors of this debate were on one side social scientist, mostly economists, and on the other side radical Maoist and ideologists. The debate became soon highly politicized, and the whole demographic discipline became criticized and labelled as rightist. The politicization of the debate occurred primarily from the second half of the fifties due to Mao Tsetung’s anti-demography standing.

Mao was aware of the threats of overpopulation, indeed at the Speech at the Eleventh Session of the

²¹ Lee and Wang, “Malthusian Models and Chinese Realities: The Chinese Demographic System, 1700-2000.,” 50.

²² The core concept of Malthus theories relies in his assumption that where the population multiplies geometrically and food arithmetically, hence the population will eventually outstrip the food supply

Supreme State Conference, he stated that “[o]ur large population is a good thing, but of course it also involves certain difficulties.”²³ These difficulties referred for example to the need to fulfill an increasingly large population basic needs and employment demands. Nevertheless, Mao genuinely believed that population growth was a resource, because, like Marx, he thought that overpopulation was not a Malthusian concept of man vs. resources, but instead a “peculiarly capitalist labor market problem in which there were always more men seeking jobs than there were employment opportunities.”²⁴ This argument was for instance reported on state media in 1958 on an editorial of the Red Flag:

*A situation of relative overpopulation is a product of the capitalist system. After people have freed themselves from heavy fetters and established a socialist system, they become the master of land and machine [...] and a large population becomes a very important factor in promoting the rapid development of the national economy and culture. Under such circumstances, the larger the population, the greater, faster, better, and more economic will be socialist construction, the faster will be the development of social productive power, and the faster will a nation become rich and strong with the people enjoying a higher level of material and cultural life.*²⁵

During the same year of the Red Flag editorial, the Great Leap Forward plan (大跃进) was announced, and with it, the demographic debate was publicly interrupted. Mao expected the new economic and

²³ Mao Tsetung, “On the Correct Handling of Contradictions among the People,” *Selected Works of Mao* (marxists.org), accessed June 5, 2014, https://www.marxists.org/reference/archive/mao/selected-works/volume-5/mswv5_58.htm.

²⁴ Plotnick, “Malthus, Marx and Mao,” 10.

²⁵ Red Fleg, ninth issue in 1958, cited as in: Ta-k’un Wu, “A 1960 Chinese Marxist Critique of Neo-Malthusian Theory,” *Population and Development Review* 5, no. 4 (1979): 704. Originally published on the *New Construction*, no. 5 (May 1960: Beijing).

social campaigns to solve the above-mentioned ‘difficulties’ of overpopulation. Consequentially, during this period any political standing favourable to population control was considered as a criticism to the Great Leap Forward and of Mao.

Nevertheless, a resolute social scientist, Ma Yin Ch’u, kept advocating even during this period of hardships for neo-Malthusianism policies. When Ma became criticized by radical Maoists, he wrote: “[a]lthough I am nearly eighty years old and outnumbered, I shall accept this challenge [to defend my position] and fight singlehanded till I die. I shall not yield to those critics who resort to force rather than reason.”²⁶ Ma had little to gain and much to lose in advocating a pro-population control argument, although he persisted in spite of the dangers posed by his dissent. He did so because of two reasons: first, he was an academic and by defending his position he was defending a lifelong career spent as an economist and demographer; second, he was a “self-strengthener” before being a Party member, and he refused to bend to what he conceived as an irrational Party decision that would have weakened Chinese future wealth and power.

In order to better comprehend the debate between Ma and the radicals, it is worthy to digress briefly on Ma’s personality and theories. Ma Yin Ch’u was born in 1882 in the former Chekiang Province, it received a classical Confucian early education and then “he received modern education in the Sino-Western Academy in Shanghai and Pei-yang University in Tientsin.”²⁷ Then, in 1907, he went to finish his undergraduate degree in economics in the US, at Yale, and in 1914 received a Ph.D. at Columbia with a doctoral dissertation on “The Finances of the City of New York.”²⁸ In 1915, he went back to China and became a faculty member of the National Peking University. In the following years, Ma got involved in politics and twice served as an advisor to Chiang Kai-shek, although in 1940

²⁶ Ma Yin-ch’u. “My Philosophy and Economic Theory,” *Hsin Chien-she* (New Construction), No. 11, 1959.

²⁷ Ronald Hsia, “The Intellectual and Public Life of Ma Yin-Ch’u,” *The China Quarterly* 6, no. Apr. - Jun. (1961): 53.

²⁸ *Ibid.*, 54.

he became highly dissatisfied with the government and started to criticize it openly. Eventually, he was arrested and released after the end of the WWII. In the post-war period, he moved to Shanghai where he became friend with Zhou Enlai.²⁹ Later on, he lived in Hong Kong and then returned to mainland China in 1949 after that Zhou Enlai invited him to collaborate with the Communist regime.³⁰

Since then he held relevant posts in the CPC³¹ and became President of Peking University.

Meanwhile, Ma kept working on his academic career. Thanks to the period of the Hundred Flowers Campaign and his influential *guanxi* he was able to pursue his academic interests without any restraint on behalf of the authorities. Hence, he embarked himself in two major research projects: the first was a theoretical analysis of planned economic development, and the second was a new demographic theory. The latter was presented as a lecture in 1955 under the title of “New Population Theory”.

Ma’s demographic theory argued in a Malthusian fashion that birth control was essential for economic development because overpopulation and high population growth rate would erode the accumulation of capital. His paper on the New Population Theory was then discussed during the Third Session of the First National People’s Congress in July 1957 and it was then reported on July 5 in the *People’s Daily*. At the time, Ma was not the only one advocating for population control and enjoyed the support of the Minister of Public Health Li Teh Ch’uan, who delivered a speech in which stated that “birth control was a State’s responsibility to the people.”³² Although, when the

Anti-Rightist Movement was launched in July 1957, Ma remained the only paladin of population control policies.

Ma was never targeted as a rightist by the Anti-Rightist Movement, after all he was still under the wing of Zhou Enlai and he was still too useful to the CPC for his economic theories. However he was negatively labelled as a “100 percent Neo-Malthusian.”³³ Ma and his theory became the object of a political campaign against Malthusian ideology and he was “was attacked by some two hundred critics from the academic and literary circles.”³⁴ While some of these critiques were ideologically biased, others tried to confute Ma’s theory on scientific ground. For example, some radical Maoist argued that since overpopulation is only a capitalist problem, Ma’s assumption on the erosion of accumulation of capital would not make sense in a communist society as:

*The principle of accumulation in socialist society and that in capitalist society are two entirely different matters. In socialist society, because the means of production are owned by the whole people or collectively owned by the laboring people, the national income created by the laboring people, in total, belongs to them. The larger the national income, the greater the funds to be used for consumption and accumulation.*³⁵

Ma was able to publish another article in November 1959 on the *New Constitution* journal, where he wrote in his defence that his theory was not based on the Malthusian paradigm but instead on the economic principle of sustainability of population growth:

I am not talking about whether food is sufficient. What I am talking about is whether our material and cultural life can

²⁹ Ibid., 57.

³⁰ Ibid., 58.

³¹ Including: member of the Central People’s Government Council; Vice-chairman of the Committee on Financial and Economic Affairs of the Government Administration Council, etc.

³² The speech was made during the Second National Committee of the Chinese People’s Political Consultative Conference. Cited as in: Leo A. Orleans, “Birth Control: Reversal or Postponement?,” *The China Quarterly* 3 (1960): 59–70.

³³ Wu, “A 1960 Chinese Marxist Critique of Neo-Malthusian Theory,” 702.

³⁴ Hsia, “The Intellectual and Public Life of Ma Yin-Ch’u,” 62.

³⁵ Wu, “A 1960 Chinese Marxist Critique of Neo-Malthusian Theory,” 705.

*ensure an early entrance into communist society by the people of China. [...] Would not a population increasing to 900 million or one billion retard our entrance into communist society?*³⁶

After the New Constitution article it followed a back and forth of attacks and in his last published article in 1960 Ma annoyingly argued that the Chinese should stop being dogmatic and deal with demography in its own terms.³⁷ Shortly after, Ma was forced to leave the presidency of the Peking University and then he disappeared from the public scene.³⁸

In 1960, the first demographic debate was officially closed, with the Maoist having marginalized the academics. After a short period of openness in the fifties, China was finally rejecting the whole demography discipline in favour of ideology and Mao's belief that "even if China's population multiplies many times, she is fully capable of finding a solution; the solution is production."³⁹ But unfortunately for the Chinese population, ideological fervour alone has a bad historical record in feeding the population. Soon after the Great Leap Forward, the 'Three Years of Great Chinese Famine' demonstrated that overpopulation was a real issue that had to be addressed with strategic planning, and not with ideological rhetoric.

In the mid-sixties, the demographic debate was once again open. Paradoxically it could be argued that the CPC while refuting Ma's theories on the balance between population growth and development, brought the Chinese population to a pure Malthusian extreme where the positive

³⁶Yin Ch'u Ma, "My philosophical thinking and economic theory," in *Hsin Chien-she (New Constitution)* (November 1959).

³⁷ *Hsin Chien-she (New Constitution)*, No. 1, January 1, 1960.

³⁸ Tien, "Demography in China: From Zero to Now," 687.

³⁹ Mao Tsetung, "The Bankruptcy of the Idealist Conception of History," *Selected Works of Mao Tse-Tung* (marxists.org), accessed June 13, 2014, http://www.marxists.org/reference/archive/mao/selected-works/volume-4/mswv4_70.htm.

checks acted to restrain the demographic growth.⁴⁰ It was still too early to formally acknowledge the mistake, but the CPC understood it had change policies. During the Extended Meeting of the Political Bureau in 1965, Ma's friend Zhou Enlai declared that "Birth Planning is progressive and communist."⁴¹

Nevertheless, it was only in 1979 that the Central Committee of the CPC formally apologized to Ma Yin Ch'u and endorsed his "New Population Theory."⁴² Unfortunately, the CPC endorsement came too late to be useful. For the Chinese policy makers of the seventies and eighties, the demographic growth caused by the baby boom of the sixties was a *fait accompli*. As an article published in the *Guangming Daily* in 1979 emphatically stated: "erroneously criticized one person [Ma Yin Ch'u]: population mistakenly increased 300,000,000."⁴³

Song Jang and post-Maoist China

As explained in the previous section, in the wake of the Great Leap Forward famine, the CPC started to step away from its anti-intellectual standing on demography. During the late sixties, the new party line became favorable to birth control policies even if it did not implement drastic centralized policies of population control. Moreover, due to the Cultural Revolution (1966-1976), the demographers and social scientist were still hesitant to publicly promote neo-Malthusian theories, and Ma Yin Ch'u studies were still banned. Most importantly, demography was only marginally studied in universities and collection of data was still lacking behind.

⁴⁰ See note 18.

⁴¹ Chengli Shi, *Zhongguojihua hengyu huodongshi (A history of China's birth planning activities)*. Urumuchi: Xinjiang People's Publishing House, 1989; cited as in Yuk-Lin Renita Wong, "Dispersing the 'Public' and the 'Private': Gender and the State in the Birth Planning Policy of China," *Gender and Society* 11, no. 4 (1997): 511.

⁴² *Guangming Ribao*, July 26, 1979; as cited in Tien, "Demography in China: From Zero to Now," 688.

⁴³ Xiangyuan Zhu, *Guangming Daily*, Aug. 5. 1979; cited as in Ibid. Tien, "Demography in China", 688.

A set of uncoordinated policies was implemented during the period of the cultural revolution. In the late sixties, after the Zhou Enlai statement, the government “started to restrict rural-to-urban migration and to promote birth planning in urban areas,”⁴⁴ then in 1973 the government introduced the *Wan, Xi, Shao* (later, longer, fewer) policy aiming to induce the population to marry later, wait longer before making another child and to make less children. The policy, combined with the natural demographic transition, achieved a “record speed of decline unmatched by any other large population in human history,”⁴⁵ and the TFR declined from 5.7 in 1970 to 2.8 in 1979.⁴⁶



Total fertility rates in Shanghai and China, 1950-1982. Figure.2 ⁴⁷

Figure 2 graphically display the fertility trend in urban Shanghai and in China. As it can be seen the TFR abruptly decreased during the famine due to positive checks, then it rapidly rose again (baby boom) and started to decrease slowly due to the fertility transition from the seventies. The overall Chinese trend was catching up with the situation of the urban Shanghai, where the fertility transition was already advanced due to socio-economic reasons. The government was finally slowly implementing the policies that one decade before

⁴⁴ Cai, “China’s Below-Replacement Fertility: Government Policy or Socioeconomic Development?,” 420.

⁴⁵ Lee and Wang, “Malthusian Models and Chinese Realities: The Chinese Demographic System, 1700-2000.,” 56.

⁴⁶ Ibid.

⁴⁷ Total fertility rates in Shanghai and China, 1950-1982. Image from: Ibid., 53.

the economist Ma Yin Ch’u auspicated. Then, in 1978, a pivotal change occurred: Deng Xiaoping became the most prominent cadre in the CPC. Deng marked a strong shift from the former CPC demographic policies. The new economic reforms that he proposed required population control. As Ma said: birth control is essential for economic development because overpopulation erodes the accumulation of capital.⁴⁸ Now, with no dogmatic Marxist economy, accumulation of capital was essential. Hence, birth control became recognized as a central policy and in the new 1978 Constitution it was stated “[t]he state advocates and encourages family planning.”⁴⁹ Deng pragmatically understood the demographic problem and he became aware that in order to achieve the four modernizations (China’s industry, agriculture, national defence and science and technology) he had to regulate the population growth. In a speech made on March 30, 1979, he debated that the government had to “greatly increase” its effort in family planning, then he rhetorically argued:

*To accomplish modernization of a Chinese type, we must proceed from China’s special characteristics. For example, modern production requires only a small number of people, while our population is enormous. How shall we reconcile these two facts?*⁵⁰

His understanding of the demographic problem was similar to the neo-Malthusian one, in his point of view overpopulation growth was not against “nature” but against development. Hence, between 1978 and 1980 (the same period when Ma became

⁴⁸ See: Ma Yin-ch’u. “My Philosophy and Economic Theory,” 10.

⁴⁹ Art. 53, The Presidium of the First Session of the Fifth National People’s Congress of the People’s Republic of China. *The Constitution of the People’s Republic of China*, March 5, 1978.

⁵⁰ Deng Xiaoping, “Uphold the Four Cardinal Principles,” *Forum on the Principles for the Party’s Theoretical Work* (english.people.com.cn), accessed June 18, 2014, <http://english.people.com.cn/dengxp/vol2/text/b1290.html>.

officially rehabilitated) the Chinese government actively tried to promote the study of demography among scholars and scientists. Consequentially, the number of demographic publications rose on average from fourteen articles a year between 1949-1978, to over 400 a year during 1979-1983, to nearly 1,000 in 1985.⁵¹ The revival of demography came together with new policies. The government moved from the slogan of the early seventies "one [child] is not few, two are just right, three are too many" to the new slogan "one is best, two at most."⁵² The slogan appeared in the Central Committee Document 69 of October 1978 and since then the local administrations started to implement a bland one child policy.

The CPC acted upon the suggestion of a report of the Birth Planning Leading Group of the State Council, which demanded for "strengthening scientific research [...] and mass mobilization" to reduce the TFR.⁵³ Although at the time there was still no centralized OCP, regions like Sichuan started to implement strictly regional policies of "incentives and penalties to limit childbirth to one child per family."⁵⁴

The centralized OCP started only in 1980 after that the military scientist Song Jian completely reshaped the debate over the population control. Song was the leading Chinese strategic weaponeers and expert in ballistic and cybernetics who played "key roles first in building China's military-industrial complex and later in converting it to civilian uses."⁵⁵ At the early age of 14, he enlisted the Eighth Route Army and joined the CCP, in 1953 he was sent to study in Moscow

under the recommendation of Liu Shaoqi.⁵⁶ There, he pursued a Ph.D. in mathematics and published seven papers, then, after the Sino-Soviet split in 1960, he came back to China.⁵⁷ Where soon he became a fundamental asset to the Party and during the turmoil of the Cultural revolution he was placed by Zhou Enlai in a list of "50 scientists who, because of their indispensability to the nation's defence, would enjoy special state protection."⁵⁸

In 1978, Deng tried to improve Chinese social sciences and consequentially asked all the military scientists to contribute to civilian academic research. In the same year, Song participated in a conference in Helsinki organized by the International Federation of Automatic Control,⁵⁹ where he had a 'first contact' with the cybernetic-based natural science of population, which in turn was tied to the work of the Club of Rome. The Club, founded by the Turinese Aurelio Peccei, became famous in 1972 after publishing a report on computing modeling of economic and population growth titled *The Limits to Growth*. Song saw in this cybernetic approach based on computational mathematics a way to find a "scientific solution to the population problem."⁶⁰ Song followed Deng invitation to contribute to civilian sciences. After all, he stated that one need the same mathematical skills to study a ballistic trajectory or a fertility trajectory. Moreover, he perceived population growth as a threat to the national security and as a military scientist he wanted to find a solution to the problem. Back in China, Song assembled a team in 1978 and for two years he worked to elaborate a demographic model using state computers developed for military usage.⁶¹ Finally in 1980, "for the first time in Chinese history, demographer Song Jian with two other social scientists projected

⁵¹ Lee and Wang, "Malthusian Models and Chinese Realities: The Chinese Demographic System, 1700-2000.," 56.

⁵² Susan Greenhalgh, "Missile Science, Population Science: The Origins of China's One-Child Policy," *The China Quarterly* 182 (2005): 260.

⁵³ Wong, "Dispersing the 'Public' and the 'Private': Gender and the State in the Birth Planning Policy of China," 512.

⁵⁴ Ibid.

⁵⁵ Greenhalgh, "Missile Science, Population Science: The Origins of China's One-Child Policy," 254.

⁵⁶ Ibid., 257.

⁵⁷ Ibid.

⁵⁸ Ibid., 258.

⁵⁹ Ibid.

⁶⁰ Ibid., 259.

⁶¹ Ibid., 262.

the population of China for the next 100 years emphasizing the need for strict population control for the success of economic liberalization.”⁶² As Susan Greenhalgh argued in her paper “Missile Science, Population Science”:

*Drawing techniques and logics from the Club of Rome and from defence science, the Song group redefined China's population issues in natural and physical science terms.*⁶³

The ‘population issue’ was finally addressed with a scientific and mathematical approach which appeared to be safe from ideological or theoretical biases. The model proposed was forecasting different population growth scenarios which revealed that if the TFR:

*At the 1975 level of 3.0 children per woman, China's population would top 4 billion in 2080 and keep on growing. The 1978 level of 2.3 children produced lower numbers, but the same trend of endless growth. Only at fertility levels of 1.5 and 1.0 would the population quickly stabilize and begin to shrink.*⁶⁴

Song advocated that the country needed a rapid one-childization (*yitaihua*) country-wide before 1985, to then maintain the same level of TFR for 20 to 40 years and then rise the TFR again to the replacement level of 2.1 children per woman.⁶⁵ The final paper of the model was then sent to the National Defence Science Commission, which in turn alarmed Wang Zhen, Chen Yun, Hu Yaobang. As Greenhalgh points out “the leaders were awestruck by the mathematics, shocked by the projections and convinced that a one-child policy

was the only option.”⁶⁶ During the Third Session of the Fifth National People’s Congress on September 7, 1980, the CPC Chairman Hua Guofeng formally initiated the one-child policy:

*The State Council deems it necessary to launch a crash programme over the coming 20 or 30 years calling on each couple, to have a single child (except those in minority nationality areas) so that the rate of population growth may be brought under control as soon as possible. Our aim is to limit the population to a maximum of 1200 million by the end of the century.*⁶⁷

To date, after about 30 years, it is evident that the policy announced by Hua Guofeng it has been implemented accordingly to the original policy plan.

Conclusion

In the recent years, demography has been a booming discipline in the Chinese academia. More and more universities offer degree courses in demography, and Chinese demographer are among the most internationalized scholars in China. Hence, it seems almost paradoxical that until very recently all the demographic policies have been proposed by radical Maoists, economists or experts in missile sciences and cybernetics. Although this paper has shown through an historical perspective that what seems paradoxical on the appearance, was very logical at the time being. Ma Yin Ch’u and Song Jang were no demographers, but they were still capable of producing astonishing research on population growth that deeply influenced policy maker decisions. Moreover, as Song once said, his demographic forecasts might not have been the best, but they were the “best available.”⁶⁸

⁶² Rajan, “China’s One-Child Policy: Implication for Population Aging,” 2502.

⁶³ Greenhalgh, “Missile Science, Population Science: The Origins of China’s One-Child Policy,” 263.

⁶⁴ *Ibid.*, 264.

⁶⁵ *Ibid.*, 266.

⁶⁶ *Ibid.*, 271.

⁶⁷ Hua Guofeng, “Hua Guofeng on the Promotion of Family Planning in China,” *Population and Development Review* 6, no. 4 (1980): 685.

⁶⁸ Greenhalgh, “Missile Science, Population Science: The Origins of China’s One-Child Policy,” 259.

To conclude it can be said that even today the legacy of these two scholars is affecting the life of millions of Chinese and it is still shaping the Chinese demographic debate. Contemporary Chinese demographers are social scientists (like Ma) prone to use stochastic and computational models (like Song) to analyze populations trends. Certainly, they are not radical ideologists anymore, although they still share the Dengan positivist-pro party weltanschauung and still work as advisors to the CPC.

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