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# The Social and Sociological Consequences of China's One-Child Policy

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## Keywords

one-child policy, China, gender, family, institutionalization, population

## Abstract

China's one-child policy is one of the largest and most controversial social engineering projects in human history. With the extreme restrictions it imposed on reproduction, the policy has altered China's demographic and social fabric in numerous fundamental ways in its nearly four decades (1979–2015) of existence. Its ramifications reach far beyond China's national borders and the present generation. This review examines the policy's social consequences through its two most commonly invoked demographic concerns: elevated sex ratio and rapid population aging. We place these demographic concerns within three broad social and political contexts of the policy—gender, family, and the state—to examine its social consequences. We also discuss the sociological consequences of the policy, by reflecting on the roles of science and social scientists in public policy making.

## INTRODUCTION

China's one-child policy is perhaps the largest social engineering project in human history. Introduced in 1979, and ended in 2015, the policy was one of the most dominant forces shaping Chinese social life in its nearly four decades of existence. By restricting the number of children to one per couple, the policy was introduced with a specific demographic aim—keeping China's population within 1.2 billion by the year 2000. However, the policy's ultimate goal was neither demographic nor social. It was economic and ultimately political. As part of Deng Xiaoping's pivot of the Communist Party's legitimacy from Mao's endless revolutions to improving people's standard of living, the policy was presented to the Chinese public as an emergency measure and collective sacrifice to ensure China's economic modernization: specifically, meeting a goal of quadrupling GDP per capita in a span of 20 years, to \$1,000 by 2000 (later revised to \$800). Yet the policy continued after achieving this economic goal for another one and a half decades, more than two decades after China's fertility level dropped to below replacement level. The policy is at once credited by some with curtailing rapid population growth and facilitating China's economic ascendance, and criticized by others as utterly unnecessary and extremely harmful.

The one-child policy altered China's demographic and social fabric in numerous fundamental ways. Its ramifications reach far beyond China's national borders and the present generation. Even the progenitors of the policy anticipated and admitted its negative social consequences, from the policy's role in distorting population's sex composition, to population aging and labor shortages down the road (Central Committee of the Chinese Communist Party 1980). Four decades after its inception, the policy's anticipated consequences have all been borne out. As with all government social engineering attempts in human history, however, there have also been unanticipated consequences (Scott 1998). It was not anticipated four decades ago, for instance, that the sex ratio at birth would be ramped up to as high as 150 boys per 100 girls in parts of the country, that a mammoth bureaucratic apparatus armed with more than half a million employees would be mobilized to enforce the policy, and that over a hundred thousand families across North America and Europe would raise daughters adopted from China. It was not anticipated that this policy would become another critical vehicle for the state to reach into individual lives long after its economic liberalization. And it was not anticipated that the country's demographic future would be hanging in the balance with a worrisome and sustained low fertility level, in part because the policy has normalized one child as the preferred number of children for a family.

Of the many social consequences of the policy, the most commonly invoked are elevated sex ratio and rapid population aging (e.g., Zhao & Guo 2007, Peng 2011, Attané & Gu 2014). In this article we focus similarly on these two lines of scholarly interest and public attention. However, we approach these two subjects from different entry points. We organize this article into five sections below. Following a recap of the history of the one-child policy, we discuss how the history of the one-child policy was a gendered process, with elevated sex ratio just one of its many manifestations. Then, instead of discussing the macro-level economic implications of China's accelerating population aging, which have been examined and speculated on rather extensively, we assess the consequences of the policy at the micro level of society, examining how the policy's implementation has reconfigured the Chinese family, the most basic institutional foundation of the society. Over a period of nearly four decades, China's one-child policy was enforced in the broad context of its unprecedented economic and social liberalizations. The simultaneous existence of such changes, in seemingly opposite directions, represents a rare case to examine state behavior and political change. We hence devote a section to the state's penetration into private lives during the one-child policy era and the implications for China's post-one-child-policy society.

Faced with a global concern of overpopulation in the latter half of the twentieth century, and with the largest and most intrusive social engineering project in hand, scholars, especially those in the disciplines of sociology and in particular demography, have served a disproportionate role in finding solutions and in evaluating outcomes. The lessons learned from the one-child policy are hence not merely social, for members of the society, but also sociological, for those engaged in the academic enterprise. We devote the final section of this article to reflecting on such lessons and consequences, on the roles of science and social scientists in their pursuit of knowledge and careers that have had direct and profound human implications.

## A CONTROVERSIAL POLICY

China's one-child policy grabbed immediate global attention at the time of its launch (Croll et al. 1985). The policy received such attention not only because it was extreme and radical, but also because of the international environment at the time—a world living under a heavy Malthusian shadow of a “population bomb” (Ehrlich 1968, Lee & Wang 1999, Wang et al. 2013). Since its inception, the one-child policy and its evolution, enforcement, and consequences have given rise to a copious body of scholarship (e.g., White 2011, Whyte 2019). However, because of the opaqueness of China's top-down decision-making process and the government's tight information control, it was not until recent years that a more complete and accurate picture of the policy's origin emerged.

One major puzzle over China's one-child policy is that it was launched at the time of economic and social liberalizations (White 2007) and when China's birth control had already achieved remarkable successes (Whyte et al. 2015). Rapid improvement in health during the early socialist years had laid the foundation for fertility reduction up to that time, and so had rising education levels (Banister 1987, Lavery & Freedman 1990, Wang et al. 2018). While Chinese planners had reasons to worry about the large birth cohorts after China's Great Leap Forward famine (1959–1961) starting to enter the labor force and to reach childbearing age,<sup>1</sup> in the decade prior to the one-child policy, fertility in China had been declining at an unprecedented pace. China's nationwide birth control effort started in 1971 with its “later, longer, and fewer” campaign, which urged couples to get married at later ages, have longer birth intervals, and have fewer births. Mass mobilization with high-pressure tactics, coupled with delivery of effective contraceptives, led to a fertility reduction of 50% in just eight short years, from 5.8 children per woman in 1970 to 2.8 in 1977 (Whyte et al. 2015). This truly remarkable success, marked by an almost linear declining trend, perhaps gave policy makers a false sense of confidence that the birth planning policy was a silver bullet and that further fertility reduction would not be out of reach with a more restrictive policy (Chen 1979, Tien 1980).

Nevertheless, given there was no immediate crisis that required China to take even more drastic steps toward birth control, the impetus of the one-child policy remains of scholarly interest. One school of thought highlighted the critical role played by a group of missile scientists (Greenhalgh 2005, 2008). Led by Song Jian, a Soviet-trained military engineer who rose to a high position in the Chinese state hierarchy years later, this group “boldly and arbitrarily” (Greenhalgh 2005, p. 253) adopted the work of the Club of Rome (Meadows et al. 1972). Song et al. (1985) advocated, based on cybernetic theory and population projection models, that a national one-child policy was a necessary measure for solving the population problem in China's quest for economic modernization. Awed by his seemingly sophisticated computer-generated models and scientific

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<sup>1</sup>The annual number of births dropped from about 19 million in 1958 to 12 million in 1961, followed by large recoveries to 25 million in 1962 and almost 30 million in 1963.

nomenclature, some of China's leaders were impressed and persuaded by Song's "scientific" one-child-for-all solution. Song's advocacy thus gave supporters of a universal one-child policy the ammunition to convince or simply to silence its doubters. In other words, the advent of scientific decision-making in the population arena might have helped to break a political logjam, allowing China's leaders to adopt a more extreme policy on population control.

The eagerness of these Chinese scientists to claim credit for the unprecedented policy, however, should not in any way abdicate the responsibilities of China's true power holders. More recently published research, in particular by Liang Zhongtang, who himself is one of the earliest and most vocal critics of the policy and a hero celebrated in Greenhalgh's (2008) work, offers a different narrative. As both an insider and a researcher, Liang participated in the late-1970s debates about the one-child policy and advocated a universal two-children policy for rural couples. Based on his firsthand observations and meticulous tracking of the steps in policy making, Liang (2014) shows that the idea of one child per couple first emerged in early 1978, amid the post-Mao modernization drive when the state planners set China's population growth target to reduce its population growth rate linearly from 12 per 1,000 in 1977 to within 10 per 1,000 by 1980.<sup>2</sup> It required no sophisticated calculation to realize that the only possible way to reach such an unrealistic target was to reduce fertility further, by limiting couples to only one child. By early 1979, the one-child policy had not only been publicized in major newspapers such as the *People's Daily* but had also been incorporated into government statistics. The emergence of Song Jian's population projection models and repackaged idea of optimal population for China came only in late 1979 and early 1980; by then the one-child policy had already been in force for a full year. In other words, Song's research played at most a secondary role in solidifying the policy efforts within the Communist Party. The policy was a result of overzealous planners' attempt to leap forward toward modernization.

The debate about Song Jian and his associates' role in the making of the one-child policy highlights the controversy surrounding the policy. Even the most zealous supporters of the policy were fully aware of the resistance and challenges the policy posed, especially in rural areas, where nearly 80% of the country's population resided at the time (White 2007). These families relied on sons to provide farm labor, and for old age security. Having a son was a must for a family to continue its name and lineage (Whyte 2004).<sup>3</sup> While different proposals existed, including one advocated by Liang himself that would allow rural couples to have two children, the debate was carried on almost exclusively inside the Party itself. Such disagreements led to the waxing and

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<sup>2</sup>The goal was first formally set as early as in September 1977 and was announced in the government report by then-chairman of the CCP, Hua Guofeng, in February 1978. In June of 1978, at the first meeting of the newly formed Leading Group of Birth Control under the State Council, the group leader, Vice-Premier Chen Muhua, openly fleshed out the idea of "one child per couple is the best, at most two children per couple," as a concrete measure to achieve the newly set goal of a low population growth rate. In September 1978, a year before Song's group's calculations, the No. 69 document of the CCP's Central Committee confirmed this new idea of one child per couple. Chen Muhua's push for a one-child solution was backed by Chen Yun, China's top economic planner at the time (Liang 2014, pp. 213–54).

<sup>3</sup>Urban and rural families were under entirely different economic and social benefits provision systems in China then. In contrast to urban employees who could receive a government guaranteed pension through their work organizations, rural elderly had no such pension or other meaningful financial support from the government. And, in spite of China's socialist government's ideological alliance to gender equality, there was no serious attempt during the socialist years to change the dominant custom of rural brides marrying out into their husbands' families, hence transferring their support obligations to their in-laws. In contrast to the prevailing practices in rural China, couples in urban China began postmarital lives neolocally upon marriage, or even lived with the bride's family.

waning in policy execution during the 1980s, as well as about a dozen unpublicized experimental areas where rural couples were allowed to have two children (Gu & Wang 2008).

Resistance to the policy on the ground and the disagreements within the Party kept official statements about the one-child policy under a veil of advocacy rather than outright coercion. On paper, one child per couple was merely advocated by the government. In reality, it became the rule of the land, with few exceptions, most notably ethnic minorities and rural couples with the first child as a girl (Peng 1991, Short & Zhai 1998, Scharping 2003, Gu et al. 2007). The catchall word “advocate” not only hides the harsh reality of the policy but also reveals an unspoken moral doubt and uneasiness in the minds of the policy makers themselves. There is perhaps no better case than the signature document that is often referenced as marking the start of the one-child policy nationwide in China. On September 25, 1980, the Central Committee of the Chinese Communist Party (CCP) issued an open letter, not to all citizens in the country, but only to “members of the Communist Party and the Communist Youth League.” The history surrounding the letter’s drafting now reveals that instead of being a call to arms, it was initially drafted as a letter to better explain to the Chinese public the need for such an extreme policy (Liang 2014). Moreover, in its nearly four-decade lifetime, this most intrusive policy was never written in *any* Chinese law as an explicit requirement, be it the Constitution, the Marriage Law, or even the Population and Family Planning Law, which itself took over two decades to pass China’s national legislature. Instead and ironically, this longest-running and most consequential policy in modern Chinese history existed under the guise of provincial regulations (Gu et al. 2007).

The demise of the one-child policy shares some eerie similarities with its birth: It was a top-down process and had a highly utilitarian flavor to its motives and rationales. By 2000, China’s population census counted a total population of 1.26 billion, 60 million more than the control target set by the one-child policy, but apparently a larger population had not hindered China’s economic ascendance. The same census also revealed that China’s fertility had been below replacement level for almost a decade, coupled with an alarmingly high sex ratio at birth (Lavery 2001, Cai 2013). Many scholars, domestic and international, joined regular citizens to publicly challenge the efficacy of and the narratives behind the one-child policy. For more than a decade, many independent voices joined regular citizens to call for change of the policy (Hvistendahl 2010, Fong 2016, Scharping 2019). Yet, policy change came only after a new CCP leadership was installed in late 2012. Beginning with the merger of the National Population and Family Planning Commission into the Ministry of Health to create a government ministry in March 2013, China announced a partial policy relaxation in November the same year, and then lifted the policy fully two years later. Starting in 2016, all couples have been allowed to have two children (Wang et al. 2016).

The new two-child policy continues the familiar statist tone. The motivation behind allowing couples to have two children is not only to reverse the undesirable demographic trends, such as aging and looming labor shortages, but also to stimulate the Chinese economy, which is now consumer based and needs more young people to spend. Married couples in China are now encouraged to have children according to the new policy, but only two. Having more than two children remains a violation and is subject to punishment, including fines or even firing from government-controlled jobs. It is a true irony to see this utilitarian rationale of managing population come to a full circle in less than 40 years, from restricting to encouraging two children.

## A GENDERED JOURNEY

The most apparent and long-lasting social consequences of the one-child policy are, no doubt, the policy’s multiple and complex impacts on the lives of Chinese women and on the gender

stratification system in that society. By placing women's bodies at the center of a government's birth control enterprise, the policy revealed and reinforced myriad forms of deep-rooted gender inequality. The forces driving gender inequality came from both the bottom and the top of the society: the long-existing gender discrimination culture embodied in part in the society's marriage and family systems, and a patriarchal state that placed the burden of birth control squarely on women (Hardee et al. 2004). Females, from unborn babies to their mothers, were the ones who endured, first and foremost, the sacrifices of the state-initiated birth control campaigns.

To accomplish the larger goal of economic growth, the patriarchal state bent, retreating from its ideological commitment to gender equality (Riskin et al. 2000, Fan 2004). In the postsocialist era in which "to get rich first is glorious," ideological commitment to gender equality took a back seat to economic development and to birth control. Whereas contraceptive and abortion services provided decades earlier were intended to facilitate women's participation in the labor force and to protect maternal and child health, this was no longer true when birth control became a state policy. Beginning in the 1970s, especially with the advent of the one-child policy, contraceptives and abortions became mostly means to control the number of births (Banister 1987, Kaufman 1993, Otis 2011). The most apparent evidence of this ideological retreat was reflected in the modifications to the one-child policy itself. After the late 1980s most couples in rural China were allowed to have a second birth, if the first birth was a girl (Liang 2014). The government conceded to the society: A son is worth more than a daughter (Sharping 2003, Gu et al. 2007).

Soon after the one-child policy was put into force nationwide, sex ratio at birth, which had started to return to normal during the first decades of the socialist rule (Coale & Banister 1994), resumed an upward tick.<sup>4</sup> Due to its political sensitivity, public discussions on this subject inside China were initially censored. The first published reports started to emerge outside of China, benefiting from the fresh demographic data made available by China in the 1980s (Arnold & Liu 1986, Hull 1990, Johansson & Nygren 1991). More than a decade after the policy's national rollout, and after repeated urging from scholars in China, the Chinese government began to admit publicly the existence and severity of this trend. Only then were scholars residing inside China allowed to speak publicly about it and to publish their analyses (Zeng et al. 1993, Gu & Roy 1995).

Explanations of the underlying causes of China's rising sex ratio ranged from the familiar to the bizarre, with findings casting different light on the Chinese gender inequality system (Hvistendahl 2011). One such example was a PhD dissertation in economics at Harvard University and the subsequent controversial publication in the *Journal of Political Economy*, attributing rising sex ratio, erroneously, to the Hepatitis B virus (Klasen 2008). Common explanations, however, traced the sources of abnormal sex ratio at birth to female infanticide in the early years (Coale & Banister 1994), concealment in reporting births (Zeng et al. 1993, Shi & Kennedy 2016), infant abandonment (Johnson et al. 1998; Johnson 2004, 2016), and increasingly, to sex selective abortion (Attané 2013, Chu 2001). Most studies attributed the rise to the specific nature of the one-child policy. The policy restricted the number of children a couple could have, and later it explicitly allowed couples with one daughter to have another birth in much of rural China. While skeptics may choose to dispute the role of the policy, studies with abundant empirical evidence demonstrated

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<sup>4</sup>Abnormal sex ratio at birth had long existed in Chinese history, mostly via the means of female infanticide and abandonment (Lee & Wang 1999). Using high-quality demographic data collected or made available up to the 1990s, Coale & Banister (1994) documented the drop in the estimated excess female to male infant deaths ratio, from over 15% for births in the 1930s, 10% in the 1940s, and only about 2% for those born in the 1960s and 1970s, before edging up in the early 1980s. As with rising sex ratio at birth in more recent years, abnormal sex ratio is mostly observed among births beyond the first.

clearly that the policy played a core and indisputable role in driving up China's sex ratio at birth. Sex ratio at birth was especially elevated among high parity births and in areas with strict policy implementation (Cai & Lavelly 2003, Ebenstein 2010, Guilmoto & Ren 2011, Li et al. 2011). The majority of China's "missing girls" are truly missing, and those hidden from government statistics are the minority, not the majority (Cai 2014, 2017).

The public discourse on this most blatant outcome of the one-child policy, however, was profoundly male-centered and gender biased (Greenhalgh & Li 1995, Riley 1999, Greenhalgh 2013). China's missing girls were framed mainly as a problem for men. With few exceptions (e.g., Trent & South 2011, Wang 2020), too often the focus was on the "surplus men," whether 20 or 34 million, not the missing girls themselves. Such concerns ranged from Chinese bachelors not being able to find a wife to sensational warnings that these surplus men could become bandits or criminals, forming a rebellious force threatening domestic stability and affecting international peace (e.g., Hudson & den Boer 2005, Schacht et al. 2016). When unmarried women are introduced into the public discussion, the discourse is infused with either an urban-elitist or a familiar sexist tone. On the one hand, concerns are often expressed for elite urban women who are not able to find a suitable husband, even though their number pales in comparison to that of the rural involuntary bachelors. On the other hand, instead of being concerned for women, this new public discourse labels unmarried women beyond the age of 30 as so-called left-over women. It is a discourse that again centers on men's interests and frames women as tools of reproduction (Ji 2015, To 2015, Fincher 2016).

The heavy sacrifice borne by Chinese women during the long course of China's one-child policy certainly did not end at a girl's birth. Studies have documented and examined the physical as well as psychic scars of Chinese women. For example, in 1983, when about 20 million babies were born, over 14 million fetuses were aborted, and over 16 million female sterilizations and over 17 million intrauterine device insertions were performed, all in just one single year (Whyte et al. 2015). Female sterilization was the default method enforced, even though vasectomies are known to be much safer and more cost effective.<sup>5</sup> The ratio of female to male sterilizations was 3.85 to 1 in 1983 and became even higher in later years. The policy further acted as a significant hindrance for pregnant women to receive prenatal care, affecting both maternal and infant health. Botched operations and lack of proper postoperative care resulted in some women having lifelong disabilities (Doherty et al. 2001, Chen et al. 2007). Parents, especially mothers, had to hide pregnancy and birth under great duress, often fleeing from one village to another or from the country to towns. Mothers during both pregnancy and delivery had to stay away from public facilities of maternal and infant health care (Hvistendahl 2011). Female out-of-quota births, if not abandoned, often grew up in fear and were denied access to basic public services such as health care and education (Attané 2013, Vortherms 2019). For numerous Chinese women, the scars left from these forced birth control operations may never heal.

With the strict policy limitation and a strong desire among many families to have a son, women were also subject to mental stress and abuse, as they were the ones most often blamed (falsely) for not being able to bear a son. The distress inflicted on women through marriage, family, and career expectations made Chinese women more likely than men to be diagnosed with schizophrenia and to commit suicide, contrary to the rates observed in Western countries (Pearson 1995, Zhang et al. 2014). The divorce risk was 43% higher for one-girl couples than one-boy couples in rural

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<sup>5</sup>The one notable exception was in the province of Sichuan, where vasectomy was much more prevalent than tubal ligation in the 1980s and 1990s.

China during the 2000s, a disparity not found among urban couples who were under less extreme pressure to bear a son (Ma et al. 2019).

Enforcement of the one-child policy also resulted in another practice: child abandonment and adoption. While some rural families abandoned their newborn daughters in the hope of having a son under the policy allowance, others eagerly adopted the abandoned girls (Johnson et al. 1998; Johnson 2004, 2016). In the 1980s most abandoned girls found homes in Chinese families, especially those who were childless or only had a son (Liu et al. 2004, W. Zhang 2006). The adoption rate within China doubled in the first half of the 1980s, from 1.1 to 2.2% of all births, equivalent to over 4% of all female births in 1986 (Lee & Wang 1999, p. 108). A later analysis confirmed such prevalence and further estimated that in provinces where child abandonment was most common, the share was as high as one in ten female births in the 1990s (Chen et al. 2015). While most adopted girls in China found love and care in their adoptive families, not all did. Adopted girls faced a substantial disadvantage in school attendance when they reached the ages of 8 to 13 (Chen et al. 2015). In extreme cases, as exposed by Chinese media and documented in scholarly studies, some girls adopted by Chinese parents were seized by local birth control enforcers and sent to orphanages, to be given away for international adoptions (Johnson 2016).

International adoption of Chinese baby girls was a direct outcome of the Chinese government's policies. As documented by Johnson (2016), adoption of abandoned children took a new turn in the early 1990s, when the Chinese government restricted domestic adoption as a way to enforce the one-child policy. With the gate of international adoption opened, at least 150,000 children, almost all girls, were adopted by parents in North America and in Europe in the decade and a half after the early 1990s (Dowling 2017). The exodus of over 150,000 Chinese baby girls to families in the West has consequently led to the rise of a new area of research based on the families with girls adopted from China. These adopted girls and their families created an unexpected population group for studying the construction of race and class, immigration, cultural identity, and multiculturalism in parenting practices (Louie 2015, L.K. Wang 2016).

Just as overseas adoption of Chinese baby girls was an unanticipated consequence, for some Chinese girls, the one-child policy may have had another unanticipated outcome, to improve the fate of the only daughters. While the shift to equal treatment of boys and girls was already underway from the 1950s due to the altered institutional features of urban socialism (Whyte & Parish 1984), with the number of children restricted to only one, urban families began to treat their single girls as if they were sons. Many urban couples concentrated their resources to invest in the educations of their only children, regardless of gender (Fong 2004, Tsui & Rich 2002, Lu & Treiman 2008). Such an investment seems to have borne fruit. By the early 2010s more females than males began to be admitted to Chinese universities (NBS 2020). While near-universal marriage and childbearing within marriage persist and son preference remains strong in China, today's young Chinese are exploring new pathways to adulthood, including premarital sex and cohabitation (Yeung & Hu 2013, Yu & Xie 2015).

Improvement in female higher education, moreover, has contributed to another new social trend in China, postponement and even forgoing of marriage. Both female marriage age and proportion never married have increased sharply in recent years (Davis & Friedman 2014, Yu & Xie 2015). Within the context of a hypergamous marriage arrangement for females, educated females are finding it harder to get married, with some deciding not to get married at all (Qian & Qian 2014).

## RECONFIGURING FAMILIES

With as many as a third of all families now one-child families, Chinese family structure and dynamics have undergone unprecedented changes. Anticipating the weakening of the family system in



supporting the elderly, the Chinese state passed rules requiring adult children to pay visits to their parents and support them when such support is needed (Meng & Hunt 2013).<sup>6</sup> Population aging has been accelerating at the societal level. For each family or individual, changes are more than apparent. The four (grandparents)–two (parents)–one (child) family is already a reality for many (Davis 2014). This change in family structure, combined with improved housing conditions, massive migration, and rapid urbanization, means that household structure and living arrangements have changed in ways that were hardly imaginable decades ago (Peng & Hu 2015). Families have been adapting with new practices ranging from how children are named to how holiday visits are organized. Singletons who marry sometimes now negotiate over whether their child might take the mother's surname rather than the father's. Married single-children couples rotate their turns when visiting their parents during major Chinese holidays.

The one-child policy has accelerated changes in family size and structure that were already underway, leaving its unique footprints. Over 150 million Chinese families are only-child families (Wang 2013). With only one child, the likelihood of parental coresidence with children has declined, as anticipated and documented (Logan et al. 1998). At the same time, it may also have increased the pressure on single children to live together with their parents. The average Chinese household size shrank from over four persons in the early 1980s to barely three by 2010. The share of small family households, those with one to three persons, rose sharply, from 34% of all family households in 1982 to 64% by 2010, with the fastest growth seen in the fraction of single-generation households. In the first decade of the twenty-first century, the number of people living alone more than doubled, from 28 to 58 million, accounting for 4.4% of the population by 2010 (Peng & Hu 2015). While such drastic changes in household size and structure can be attributed to other broad social as well as ideational changes also occurring in the Chinese society, such as massive migration, rapidly improved housing conditions, and an increasing preference for independent living, the role of the demographic change cannot be discounted.

Even with a shrinking average household size, coresidence remains a strong tradition. According to China's 2010 census, among households with persons aged 60 and up, two-thirds were coresident stem families, with the remaining third of elderly persons living alone. Living together or not, families maintain strong ties across generations. Intergenerational solidarity is seen in extensive childcare provided by grandparents, in the form of either coresidence (including skipped-generation arrangements, with no parent present) or support provided by noncoresident grandparents (Chen et al. 2011). Children's main filial responsibility to parents similarly remains strong, with daughters playing an increasingly important role in both financial assistance and emotional support (Xie & Zhu 2009, Lei 2013). At the same time, the younger generation also faces pressure to manage the cultural demands of elder care, together with the usual financial, caregiving, and emotional concerns, especially when all the burden falls on a single child (Zhan et al. 2011).

A point of keen interest in the policy's consequences has been the socialization and personal traits of the only children. A particular concern was whether this generation would grow up as a spoiled generation, or what was labeled as a generation of "little emperors" (Fong 2004, Hvistendahl 2013). Conclusive evidence so far is still sparse, as a proper research design was hard to come by. With the one-child policy, almost all urban children born were only children, hence no comparison group was feasible. The few studies that are able to address this methodological

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<sup>6</sup>Children's obligation to support parents was written into the 1950 Marriage Law and all subsequent revisions, as well as the Chinese Constitution since its 1982 revision. The visiting obligation was added into the Elderly Protection Law in 2012.

debacle, however, are largely uniform in their conclusions. Studies have found no significant cognitive or behavioral differences between only children and children with a sibling (Poston & Yu 1985, Poston & Falbo 1990, Song & Wang 2019). Even when studies were able to identify certain differences in cognitive abilities, such differences were found early in life and diminish quickly (Cameron et al. 2013). The worries about a generation of little emperors, therefore, seem to be overblown.<sup>7</sup>

The one-child policy has created not only new families but also new risks for families. The worst fear for parents is that their only children would die before themselves, a small but certain demographic risk (Wang 2011, Feng et al. 2014, Fang 2020). Such fears have turned into reality, magnified by tragic events such as the 2008 earthquake, which resulted in 70,000 deaths, among which an estimated 12,000 were only children (Settles et al. 2013, Wei et al. 2016).<sup>8</sup> It is estimated that a million Chinese families have already lost their only children (Jiang et al. 2014, Song 2014), and the risk of losing an only child in rural areas is 1.68 times that in urban areas (Wang 2013, 2016). These bereaved parents are “not only deeply impacted by the loss of the most loved one, but are also stigmatized by the culture and victimized by the one-child policy” (Zheng & Lawson 2015, p. 399). According to an NBS/UNFPA/UNICEF (2015) report, women who lost their only child tend to be less educated, more likely to be divorced and widowed, and more likely to be unemployed. Moreover, while more urban families lost their only child as the policy was almost uniformly enforced in cities, life was especially difficult for rural families that lost their only child as these families have much less social support from the government than families in Chinese cities.

Families and individuals have begun to modify their expectations and behaviors to adapt to the new demographic reality. The adaptation process is mutual, both by parents and by their children. With only one child, parents are making more of an effort to invest in their children’s education and to pay for their housing and other expenses (Davis & Sensenbrenner 2000, Zhai & Gao 2010, Chen et al. 2011). Chinese parents are also preparing for independent lives at the same time (H. Zhang 2006). The almost universal son preference is shown to be receding, as some families choose to have just one daughter (Shi 2017a). Studies have reported that being the only child heightens the sense of filial piety among children and children’s desire for their parents’ happiness (Deutsch 2006). With only one child available, many parents began to appreciate the value of their children as well, especially the care provided by daughters (Zhang 2009, Murphy et al. 2011). Strengthened emotional bonds between daughters and their parents, and increased daughters’ support for aging parents, have turned out to be among the unexpected social consequences of the policy.

## INSTITUTIONAL ADAPTATION AND STATE CONTROL

Tasked to enforce birth control with the one-child policy as its core element, China’s birth control bureaucratic apparatus offers a prime example to showcase the workings of the Chinese state: how it exercised its power and at the same time adapted to a changing economic and social environment. The birth planning system is in many ways unique in Chinese history. On the one hand, enforcing the birth control policy followed some of the traditional modes of the Chinese state operations: mobilization, public campaigns, and coercive measures. It resorted to coercion

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<sup>7</sup>Research on single children in the United States (e.g., Blake 1981, Downey 1995) finds that only children do better in school than those with siblings, but this relationship is not necessarily causal (Guo & VanWey 1999). A recent study in Taiwan (Chen 2015) shows that only children’s school performance was not as good as firstborns with siblings but was similar to or better than other children.

<sup>8</sup>This is according to a careful estimate by demographer Wang Guangzhou of the Chinese Academy of Social Sciences in 2008 ([http://blog.sina.com.cn/s/blog\\_4adb61160100caoy.html](http://blog.sina.com.cn/s/blog_4adb61160100caoy.html)). The official tally is 5,335, but there are major concerns of underreporting.

and local terror, from forced sterilizations and abortions to knocking down farmers' houses, confiscating draft animals, imposing arbitrary and heavy fines, and even locking up family members for violating the policy. On the other hand, the birth planning system itself also thrived over a period when the most drastic socioeconomic changes in recent Chinese history took place, amid internal political struggles and international criticisms. The system has hence been examined as an exemplary case for China's unified bureaucratic system to carry out a decision by the central authority (Huang & Yang 2002, White 2007, Zhou 2017). Four main characteristics have been identified as central to the apparent success of the policy's enforcement: (a) a bureaucratic system penetrating directly down to people's lives at local levels, (b) a strong negative incentive structure or the so-called "one-veto rule"—government officials could be punished or even removed for violations of birth planning policy under their jurisdictions, (c) innovation in management, including an evaluation system based on specific numerical criteria and unscheduled inspections, and (d) mass mobilization (Zhou 2017).

As we review in the section on the policy's history titled *A Controversial Policy*, the one-child policy was born in an era of economic and political liberalization, when the state gradually retreated from planning the economy and managing people's day-to-day lives. The birth planning apparatus was the only government agency that continued the Maoist mass mobilization tradition and, further, established a top-down system that penetrated down to every family and household. Established as an independent ministry-level governmental branch in 1981, the birth control apparatus quickly expanded into a bureaucratic behemoth. According to its 2005 staff census (NPFPC 2009), China's birth control system installed a total of 82,350 offices/agencies across the country and employed 508,713 administrative and professional staff. Adding to this half-million full-time workforce were the 1.2 million neighborhood/village cadres designated for birth control tasks, who were further backed up by an additional 6 million group leaders and 94 million members under the umbrella of Family Planning Associations.

One unique adaptive mechanism that sustained the operation of the birth control apparatus was the creation of a new self-supporting financial model. Even with its strong mandate from the central government, birth planning efforts nationwide were mostly financed by local resources (Merli et al. 2004). For much of the policy's life, local government revenue was under great duress, especially in the 1990s and the early 2000s, when China's fiscal system underwent major reforms. The share of government spending as economic output, for instance, dropped sharply, from 27% in 1980 to merely 11% in 1995 (NBS 2020). Local birth planning apparatuses quickly became largely self-supporting institutions, relying heavily on fines collected from families under the name of "social compensation fees" levied on violations to policies, mostly on out-of-plan births. The fines ranged from one year of per capita income in the locale where the family resided to several times that (Scharping 2003, Greenhalgh & Winckler 2005). According to one study, in 1997, support from direct budgetary allocations accounted for only 19% of total spending on China's birth control efforts, while social compensation fees made up 51% and special local taxes and business contributions accounted for 14.6% and 15.5%, respectively (Yang & Li 2016). Moreover, fines collected from families for birth control violations even supported other government agencies in areas where local government revenue came up short, especially for spending under the category of so-called extrabudgetary revenues, as such fees were not counted as a normal part of local governments' revenues and could be spent at the discretion of local officials. News media often reported how fines were set at arbitrary levels. In some parts of China, local officials deliberately allowed out-of-plan births so fines could be collected to support government expenditures (Wu 2013, Shi 2017b).

Parallel to its direct intervention in people's daily lives, the government also orchestrated efforts to normalize the idea of one child, with a special emphasis on population "quality over

quantity”<sup>9</sup> and on collective benefits over individual sacrifices (Fong 2004). China’s population project thus is a striking case of governmentalization in the Foucaultian sense, which includes both direct government intervention and indirect intervention by nonstate social institutions, and cultivation of individuals’ self-regulation (Greenhalgh & Winckler 2005). Indeed, fertility reduction in China was achieved not only following rapid economic development and through strict policy enforcement but also through changing popular norms, increasingly accepting and internalizing the “quality” argument and modernization rationales behind the one-child policy (Milwertz 1997, Merli & Smith 2002, Nie & Wyman 2005).

By the turn of the new century, China’s economic prosperity had enabled the government to devote more resources to social spending and reinsert itself back into people’s daily lives with new social welfare programs, many of them designed to counter the negative consequences of the one-child policy. One of the widely used slogans in the early years of the one-child campaign was, “one child is great and the government will provide old age support,” responding to rural couples’ concerns about old age support. The slogan, however, long remained nothing more than a good sound bite without substance because China’s socialist pension system was employment based, and for much of the 1980s and the 1990s, the state struggled to provide benefits even for its urban employees and retirees (Cai & Cheng 2014). It was only in 2009, 30 years after the launch of the one-child policy, that the government piloted the New Rural Pension Scheme. A similar program for the urban unemployed, the Urban Resident Pension Scheme, was launched in 2011. By 2014, about 80% of the adult Chinese population was enrolled in some type of public pension scheme. China also launched the New Rural Cooperative Medical System for the rural population in 2003 and the Urban Resident Basic Medical Insurance for urban residents without formal employment in 2007. By 2010, the New Rural Cooperative Medical System had covered 96% of rural residents, and the Urban Resident Basic Medical Insurance scheme also reached a coverage rate of 93% (Wang et al. 2019).

The achievements so far of the postsocialist social welfare regime are nevertheless still highly unequal and inadequate for the majority of the population. China’s newly expanded rural pension program, for instance, is so far more of a symbolic gesture than a form of substantive support, despite its broad coverage. This rural pension program provides rural elders aged over 60 without prior contributions a flat basic payment of about US\$8 per month, half of China’s poverty threshold set in 2010 and about 15% of the per capita consumption level for the rural population (Shen et al. 2018). As a comparison, the average monthly pension for government employees was over US\$400 per month. Nevertheless, even such a minimal expansion could have effects on elderly behavior and choices. For example, Liu et al. (2015) show that the rural pension significantly improves the quality of life of rural elders. It is no surprise that the expansion of welfare programs has boosted people’s political trust, especially their trust in the central government (Li & Wu 2018).

As with the implementation of the one-child policy, welfare expansion in the wake of the policy has evolved into a new basis for the government to exercise its control. Over its nearly four decades of existence, China’s birth control system had been developed into a system of total population control, a system that could monitor everyone’s vital events. With the use of modern surveillance technology, new forms of the state’s reach are on the horizon. One of the one-child policy’s legacies is to merge and to expand that system into an even more comprehensive and sophisticated grid of population record keeping, with a management network on the ground and a social credit score system online. Virtually everyone in China is now linked to digital records and databases that tie their behaviors to governmental benefits (Jiang 2020, Tang 2020). The one-child policy,

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<sup>9</sup>A commonly used phrase in Chinese, “population quality” refers to not only people’s physical and psychological well-being but also their educational attainment and socioeconomic improvement.

by undermining the family foundation of Chinese society and by contributing to establishing the state monitoring capacity, has greatly weakened the Chinese people's social capacity to resist state domination. The policy has ended, but its legacy of state intervention and control lives on.

## POPULATIONS ARE NOT JUST NUMBERS

In its nearly four-decade-long existence, China's one-child policy has reconfigured Chinese society. Some of the policy's consequences have become apparent, but many more will emerge over time in the future. In this article, we have highlighted only three aspects of the many consequences of the policy: on women and gender relations, on aging and family life, and on the institutional adaptation of the Chinese bureaucracy. Over the life of the policy, we have learned not only the consequences we discuss in this article but also how the academic disciplines approached the subject.

From the very beginning of the policy's formulation, its justifications rested on false numbers. The policy was derived from a false assumption of linear birth rate decline. Song et al.'s (1985) own projection clearly showed that China's population would be within 1.2 billion by 2000 if fertility were to gradually decline to 1.5 by 1983 and stay at that level thereafter. This projection was presented instead as a justification for the universal one-child solution. The most outlandish claim, created and propagated by China's National Population and Family Planning Commission and quickly picked up by international news media, was that the one-child policy averted 400 million births. *The Economist* (2014), for instance, heralded in 2014 China's one-child policy as the fourth most important among the world's top 20 policy actions that reduced global CO<sub>2</sub> emissions, after the Montreal Protocol, the use of hydropower worldwide, and the use of nuclear power worldwide. This claim of an "astonishing number" of "births averted" not only obscured the enormous sacrifices by Chinese families but also was made up based on facile assumptions and wild exaggerations (Wang et al. 2018, Gietel-Basten et al. 2019).

The process leading to the policy's abolition, just as how it was conceived and implemented, was also steeped in false numbers (Wang 2015). For nearly two decades leading to the policy's end, China's National Population and Family Planning Commission and a few researchers funded by it made every effort to inflate China's fertility level and exaggerate the size of a potential baby boom to follow any policy relaxation (NPDSRT 2007, Zhai et al. 2014), in the hope of justifying the continued one-child policy and delaying policy change. They did so against the overwhelming empirical evidence from numerous surveys and censuses, and a body of rigorous research (Feeney & Yuan 1994, Zhang & Zhao 2006, Wang 2015, Guo et al. 2017).

By treating people as only numbers and by relying on simplistic numerical exercises to inform policy making and evaluation, demographic research has left the society out of population studies. By doing so, "population," an aggregate number used for statistical purposes, was put above "people," a constellation of different individual human beings. In hindsight, the academic communities, especially the discipline of demography, wandered astray. In the pursuit of a policy goal of curtailing global population growth, the discipline missed some of the very central questions that it is expected to offer scientific and sound answers to. Such questions include the relationships between population and economic growth, the role of government family planning programs versus other social and economic forces in affecting fertility change, and in the Chinese case, even the most basic demographic principles of population growth.

A primary justification for launching the one-child policy in China was based on a simple premise that a large and a growing population was detrimental to economic growth and to improvement in standards of living. Too often, and especially in the earlier years, the number of births was treated just as something that could be manipulated for economic development. Yet, over the course of the one-child policy, the world as a whole survived the population bomb (Lam

2011). China, in particular, has witnessed one of the most spectacular economic booms in history. Such a boom was due largely to China's economic reforms that transformed its economy from a plan-based to a market-based system, and a transformation that released the productive and creative energies of China's young labor force. The changes in the economic system also turned the old understanding of the relationship between population and the economy on its head. Population, instead of being a burden, turned out to be a resource for growth (Bloom & Williamson 1998, Wang & Mason 2007).

Another prevailing perception in global fertility change was the unrivaled role of government family planning programs. The one-child policy was also rationalized in part by such an understanding. Here again, a seemingly too-simplistic relationship was formed between two numbers: contraceptives and births. While there is no doubt that government family planning programs around the globe could provide much-needed contraceptive means for individuals, especially women, to control their bodies and their reproduction, overemphasizing the roles of the policy obscured a full understanding of other important factors in fertility change, in China and elsewhere (Shen et al. 2020). In the case of China, such a partial and simplistic overemphasis served as justification for an extreme policy, while leaving out the roles played by other fundamental changes in Chinese society, such as the rises in infant and child survival and in female education prior to the one-child policy, and the massive migration and urbanization processes along with the dramatic economic growth afterwards.

The last example of obsession with numbers over science comes from the one-child policy itself. It is well known in basic demography textbooks that population growth is a product of rate and size. A low fertility rate multiplied by a large number of women of reproductive age can result in the same number of births as a high fertility rate coupled with a small number of young women. Yet, the greatest demographic irony of the one-child policy was its sole fixation on the number of children—restricting each couple to only one child and planning/assigning annual birth quotas by province. Replacing the earlier policy of later marriage, longer birth intervals, and fewer births with a policy that focused solely on the number of births, the one-child policy turned out to be not only socially inhumane but also demographically unsound. The one-child policy was followed immediately with several years of increases in annual birth numbers, largely due to a marriage boom caused by the relaxation of the late marriage requirement (Feeney & Wang 1993, Qian 1997). It is also ironic that the earlier policy was formulated when China had no trained academic demographers, as the field of demography in China did not emerge until after the launch of the “later, longer, and fewer” policy. Once put into place, a momentous one-child policy that was designed by party officials became absolutely impervious to criticism, and any bad news about the policy was often smothered and punished.

As the world leaves behind the worries of an unstoppable population explosion in the twentieth century, humanity faces a new existential threat, that of global warming and climate change. Will we do better this time? A simplistic, number-centered, demographic determinism got us on the wrong path in the past. The same path ought not be trekked again. In disagreeing with an evidence-based correction to the flawed and simplistic understanding of population and economics (Lam 2011), a critic (Becker 2013, p. 2179) suggested the following litmus test: Will future generations (cohorts born about 40 years from now) look back and wish our generation had done more to preserve the world that was bequeathed to us?<sup>10</sup> Should such efforts to preserve the world include restrictions like the one-child policy? If we were to apply the same long-term test to the

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<sup>10</sup>It has been suggested that such efforts to preserve the world should include restrictions like the one-child policy (Francis 2009).

one-child policy, which was launched just over 40 years ago, the answer today, we believe, is clear and unequivocal: the one-child policy was an unnecessary and catastrophic blunder, and because of it, many did not get the chance to be born to see the world today, no matter how imperfect it is.

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