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When Formal Laws and Informal Norms Collide: Lineage Networks versus Birth Control Policy in China[1]

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Ancestor worship and bloodline continuation are the core norms of lineage in China. Beginning in the late 1970s, these cultural norms came into direct confrontation with the state birth control policy. Pitched against each other are the antinatalist laws backed by the powerful and unyielding state apparatus on the one side and the ancient pronatalist norms backed by revived lineage networks on the other. Even though the draconian state policies did succeed in dramatically reducing the overall birthrates, data analyses show that villages with strong kinship networks tend to have higher birthrates. The findings demonstrate the normative capacity of social networks to bend the iron bars of formal institutions. A general framework is developed for analyzing the roles of social networks in four ideal-typical juxtapositions of formal and informal institutions: normativism, legalism, congruence, and conflict.

INTRODUCTION

The core norm in the Chinese lineage culture is to perpetuate the lineage bloodline. The lineage bloodline is perpetuated if future generations multiply in number and prosper in wealth. Ancestor worship is the Chinese cultural construction through which descendants are united around a

common goal and shielded from misfortunes by ancestral spirits. Ancestor worship is not simply popular culture but is also codified in state ideology, Confucianism. By emphasizing filial piety (*xiao*) as a cardinal virtue, Confucianism reinforces the pronatalist norms of the lineage. Thus, the pronatalist norms and state power coexisted in harmony for millennia.

Since 1980, however, the lineage norm of perpetuating the bloodline through reproduction and multiplication came into direct conflict, for the first time in Chinese history, with the state birth control policy. During the 1950s and 1960s, China's total fertility rates remained very high, hovering at five to six children per woman, because Mao Zedong ignored warnings from demographers about the danger of overpopulation.[2] With dramatic improvement in public health and drastic reduction in infant mortality rates, China's population expanded rapidly from 550 million in 1950 to 830 million in 1970. Confronted with the reality of a population explosion and mounting unemployment, the Chinese leadership began in the 1970s to advocate birth control via a soft policy of "later marriage, longer birth intervals, and fewer children" and effectively reduced total fertility rates to fewer than three births per woman by the end of the 1970s. Starting from 1980, a much harsher antinatalist policy was enforced that came to be known as the "one-child policy." Total fertility rates were further reduced from just below three in the late 1970s to below the replacement rate of 2.2 per woman by the 1990s (Zeng 1996; X. Peng 2004, p. 136; Greenhalgh and Winckler 2005, pp. 17–18).[3] The compulsory one-child policy has been both acclaimed for its effectiveness (Banister 1987; Zeng 1996) and criticized for its draconian nature (Lee and Wang 1999; Greenhalgh 2005; Greenhalgh and Winckler 2005). Both supporters and critics attribute the success of this policy to the effective grassroots organizations of the Communist government. It seems that state power has completely overwhelmed popular mores and peasant resistance in rural China. Or has it?

Of interest here are not the social demographic implications of birth control policies but the microlevel tug of war between pronatalist norms

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[2] The total fertility rate is computed as the weighted average of age-specific birthrates for woman in a given year. It indicates the average number of children born to each woman over the course of her life. A total fertility rate of 2.2 is considered the population replacement rate.

[3] According to China's fifth population census in 2000, the national total fertility rate of that year has dropped to 1.22 per woman, a figure generally believed to be too low (because of underreporting). Using primary school enrollment data, Wang Guangzhou (2006) estimates that the total fertility rate in 2000 should be between 1.7 and 1.8 per woman. Greenhalgh and Winckler (2005, p. 155) believe that it should be around 1.6 (see also Retherford et al. 2005).

backed by the lineage and the antinatalist laws enforced by the state apparatus. The question is not how effective state control is but whether peasant solidarity, such as that embodied in the lineage networks, can bend the iron bars of the state policies.

This analysis draws insights from social capital theories that emphasize the normative control capability inherent in network density and group solidarity (e.g., Coleman 1990; Portes and Zhou 1992; Sandefur and Laumann 1998; Putnam 2000). Their basic argument is that groups or communities with dense interpersonal networks, strong solidarity, and a high level of trust are better endowed to organize collective action and enforce informal norms. I have previously proposed that kinship networks in China today constitute such normative capacities and have served to foster entrepreneurship when formal laws protecting property rights were absent (Y. Peng 2004, 2005). Extending the theoretical logic to birth control, we can derive the hypothesis that villages with dense lineage networks should be better positioned to reinforce the pronatalist norms and to collectively resist the state birth control policies and therefore have higher birthrates than villages without such networks. In other words, the normative capacity embodied in lineage networks should render the state birth control policies less effective.

I will use a village-level data set collected in the early 1990s to demonstrate that kinship-networked villages tend to have higher crude birthrates. I then use the findings to illustrate the general theoretical point that when formal rules and informal norms collide, dense social networks function to increase the enforcement costs and reduce the effectiveness of formal rules.

FORMAL LAWS VERSUS INFORMAL NORMS

Institutions are rules and enforcement mechanisms that constrain individual actions, structure incentives, and increase the predictability and calculability of human interactions. Rules evolve to overcome first-order collective action problems, or what economists call externalities. Enforcement of rules poses a second-order collective action problem. If a third-party enforcer emerges, such as a central political power, rules become formal laws and decrees. Rules not enforced by a third-party political authority but governed by social mechanisms become mores, customs, and habits, that is, informal norms. The effectiveness of rules, either functional or dysfunctional, depends on the effectiveness of these enforcement mechanisms.

The sociological contribution to the analysis of informal institutions is the insight that interpersonal networks function to generate and enforce

informal norms (Coleman 1990; Portes and Zhou 1992; Nee and Ingram 1998). Social relations generalize reciprocity and help overcome second-order free-rider problems and collective action dilemmas. Thus, dense social networks imply solidarity, enforceable trust, and normative control capacities. Social networks enforce norms via two mechanisms: (1) reinforcing individual beliefs (internalized norms) via group dynamics and (2) sanctioning norm-abiding behaviors via collective actions. Both mechanisms are based on network density and group solidarity that ease information flow and facilitate collective actions.

In my previous study (Y. Peng 2004, 2005) I have advanced the thesis that social networks influence economic development through enforcing norms regarding property rights and economic transactions. The influence can be large or small, efficiency inducing or efficiency reducing depending on the nature of the informal norms and their relationship with formal institutions. In this section I will try to extend the argument into a general framework for analyzing the various roles of social networks contingent on different types of relationships between formal laws and informal norms.

The relationship between formal and informal institutions has attracted much attention in recent years (Ellickson 1991; Huang 1996; Nee and Ingram 1998; Posner 2000; Hechter and Opp 2001; Nee and Swedberg 2005; North 2005; Greif 2006). These studies focus on how informal norms provide legitimacy to formal institutions (North 2005), how daily social exchanges subsume the enforcement costs of formal laws (Ellickson 1991), how formal laws and informal justice overlapped and intermeshed in Qing China (Huang 1993, 1996), or how social networks support informal property rights as a substitute for formal property rights institutions (Nee 1992; Nee and Su 1996; Y. Peng 2004). The focus of the current analysis is on the question, What happens when formal rules and informal norms collide? For theoretical consistency, I will first map out a typology of the relationship between formal and informal institutions and develop some general theses regarding the roles of social networks in different situations.

From the perspective of actions, there are three types of institutional constraints: prescriptive, proscriptive, and neutral. Cross-classifying formal laws and informal norms produces nine cells that can be combined into a five-category topology (table 1). Of interest are the first four scenarios: (1) normativism (i.e., governance by informal norms without the backing of formal rules), (2) legalism (i.e., governance by formal rules without the backing of informal norms), (3) congruence between formal and informal institutions, and (4) conflict between the formal and the informal. The fifth scenario of free actions is either laissez-faire utopia or Hobbesian anarchy depending on whether the "free" actions incur exter-

TABLE 1
DEVELOPING A TYPOLOGY OF THE RELATIONSHIP BETWEEN FORMAL AND
INFORMAL INSTITUTIONS

	INFORMAL NORMS		
FORMAL RULES	Prescriptive	Proscriptive	Absent/Ambivalent
Prescriptive	Congruence	Conflict	Legalism
Proscriptive	Conflict	Congruence	Legalism
Absent/ambivalent ...	Normativism	Normativism	Free actions

nalities or not and, if yes, whether the externalities are positive or negative. This scenario is not of interest for this article.

Table 2 summarizes different roles for the normative capacities of social networks corresponding to the four types of relationships between formal and informal institutions. Following the lead of Nee and Ingram (1998), I advance the following four propositions: (1) When informal norms alone define institutional environment and the corresponding formal rules are absent, neutral, or ambivalent, social networks play a major role in rule enforcement. The normative control benefits of social networks should be highest in this scenario. (2) When informal norms are absent, neutral, or ambivalent and formal rules alone define institutional environments, social networks become irrelevant. Formal enforcement costs may be prohibitively high. (3) When informal norms are congruent with formal rules, social networks function to reduce the enforcement costs of formal rules. Normative control benefits of social networks obtain by subsuming the costs of formal enforcement. (4) When informal norms are in conflict with formal rules, then social networks function to increase the formal enforcement costs by "bending the iron bars" of formal rules. Vice versa, the normative capacity of social networks is vitiated by formal institutions.

The first proposition refers to the scenario of effective informal norms without the backing of formal rules. As a matter of fact, all human societies evolve from normativist tribal societies. In a tribal society everybody knows everybody and each member lives under the watchful eyes of the others. There is not much need for formal laws. As the human population grows, social economic life becomes increasingly complicated and anonymous, social networks are stretched thin, and informal norms alone are ill equipped to deal with the volume and scope of social exchanges. Formal laws evolve henceforth. In institutional economics, reliance on informal contracts and informal property rights is known as the "problem of private ordering" (Williamson 2002). Dixit (2004) explores various alternatives to legal governance when the central polity is disorganized or dysfunctional and property rights and contract laws are absent or ineffective. Using game-theoretical mathematical modeling, he shows that the effectiveness

TABLE 2
ENFORCEMENT MECHANISMS, ORGANIZATIONAL EFFECTIVENESS, AND THE NORMATIVE
CONTROL BENEFITS OF SOCIAL NETWORKS

Relationship between Formal and Informal Rules	Enforcement Mechanisms	Valence of Social Networks	Organizational Effectiveness
Normative	Rules are supported only by social networks	Strongest	Medium
Legalistic	Rules are policed only by a third party, such as the state	Low	High
Congruent	Social networks subsume costs of formal enforcement	Strong	Highest
Conflictual	Social networks increase costs of formal enforcement	Medium	Low

of relation-based informal governance declines as the group size increases whereas law-based formal governance gains in efficiency as the group size grows.

Except for some remote pockets such as Amazon jungles or African deserts where anthropologists may spot some "intact" tribal groups, it is difficult to find a purely normative society in modern times. More realistic are scenarios in which informal norms play a dominant role in defining the ways of doing things. Typically developing countries and transitional economies, such as China and Russia, are still in the process of institutional building or restructuring. Formal institutions are often in disarray in these countries and, even when in place, tend to be sidetracked or emasculated by informal routines, "hidden rules," and a pervasive web of intricate personal networks.

Combining historical narratives with game-theoretical modeling, Greif (2006) shows that medieval Maghribi merchants, in the absence of legal contract enforceability, relied on a reputation-based enforcement mechanism to employ overseas agents for long-distance trade. The reputation-based enforcement operated by creating a credible threat of collective punishment so that the long-term gain of honesty outweighed the short-term gain from opportunistic behaviors. This type of collective sanction was supported by an informal coalition: "a business network of members who belonged to the same ethnic and religious community" (Grief 2006, p. 59).

Sociologists are intrinsically interested in the study of informal norms, social networks, and the relationship between the two. One example is Nee and Su's analysis of informal privatization in China's transitional economy. Informal privatization refers to "a social transfer of rights over public property to private individuals that is not constitutionally recognized and therefore not backed by legal ownership" (Nee and Su 1996,

p. 114). Specifically, informal privatization takes the form of a long-term lease of public/collective enterprises to managers, which usually gives the managers rights to residual control and residual income. Because these rights are not guaranteed by legal ownership, they constitute informal private property rights. "Informal property rights are, in essence, norms (or rules) governing the use of resources" that are sanctioned by social disapproval, ostracism, and conflict (p. 114). Thus, the security of informal property rights hinges on the stability and strength of the social networks in which these rights are embedded, most likely, in this case, the personal ties between local officials and incumbent managers. Informal property rights are vulnerable to costly contestation. When outright privatization of public properties was unconstitutional in the early stages of market reforms, informal privatization was the second-best solution.

My previous analyses (Y. Peng 2004, 2005) of the relationship between kinship networks and rural entrepreneurs in China also lend support to the first proposition. Village-level data show that villages with strong lineage networks tend to have a much higher level of entrepreneurial activities. In parallel to Nee's conception of informal privatization, I attribute the large payoff of the lineage networks mainly to its normative capacity in enforcing informal norms of private property rights. Even during the collective era, Chinese peasants were allowed small pieces of private farmland. These private plots probably both resulted from and contributed to the tenacity of Chinese peasants' norms regarding private property. I have proposed that lineage solidarity and kin trust promoted rural entrepreneurship by protecting the entrepreneur's property and contractual rights that are consistent with peasants' cultural norms. This "payoff" was particularly large during the early stage of China's market transition, when formal property rights institutions were ambiguous and ineffective.

My earlier analysis falls short, however, of demonstrating the correlation between social networks and normative control, as my interpretation of the normative capacities of kinship networks is mostly theoretical reasoning. Corroborative evidence comes from Lily Tsai's (2002, 2007) analysis of lineages and public goods provision in Chinese villages. Weaving together ethnographical studies and statistical modeling, Tsai shows that lineage and temple associations in Chinese villages contribute positively to the provision of public goods such as running water, paved roads, and school building maintenance. Informal norms can be conceived of as a type of public goods. If kinship networks help villagers overcome collective action problems in public goods provision, they should also help enforce norms.

The second proposition can be dubbed "the legalistic approach to institutions." When informal norms are absent, social networks are rendered

irrelevant and formal policing becomes the only means of enforcement. This is actually not an efficient solution because formal policing is costly and minor infractions are hard to sanction. Max Weber is the most inspiring author in the analysis of formal institutions. He insightfully pointed out that the development of capitalism is associated with increasing formalization and bureaucratization (see Weber [1916] 1951). However, his doomsday prediction that humanity will be trapped in a cold and impersonal "iron cage" of formal rationality has not and, in all likelihood, will not ever come true. Even though modern life is governed by more and more complex formal rules, informal norms do not seem to be fading into oblivion. This is indeed a "Weberian ideal-type" because it does not exist in reality.[4]

Thus, empirical research of this scenario is scanty. Usually, formal institutions evolve out of preexisting cultural traditions or the need to eradicate some undesirable cultural norms. For instance, the US Civil Rights Act of 1964 was enacted to counter racial prejudices. Even if a law is established in the absence of preexisting relevant norms, law-abiding norms usually evolve over time, through means such as legal education. Either way, a purely legalistic scenario seems unusual. Nevertheless, it may be useful to imagine a hypothetical situation. Suppose that a highway passes through a town with a speed limit of 55 miles per hour. As the highway traffic has little impact on the town's daily life, its residents would be indifferent to the speed limit regulation. In such a situation, social networks have no valence; that is, whether the townspeople are acquainted with it or not has no bearing on whether they would heed the speed limit. But imagine again that a street passes by the town's primary school with a stipulated speed limit of 25 miles per hour. Naturally the townspeople would have a tacit norm against reckless driving on this street. In this case, a dense network among the townsfolk would surely deter speeding.

Although a purely legalistic scenario is hard to come by, cases in which formal institutions play dominant roles are quite common. Of relevance here is Greif's (2006, chaps. 8–9) comparison of collectivist cultural tradition in the Muslim world with individualist values in the West. Medieval Europe, such as the city-state of Genoa, inherited a "non-kin-based" social structure and individualist cultural beliefs. Genoese traders could gain from hiring overseas agents if they could figure out a way to reduce the

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[4] The first empire of China, the Qin dynasty, might have modeled its state structure on the purely legalistic ideal. In reality, however, the Qin state had probably not even come close to that ideal because of many tenacious local customs and mores in the newly unified land. Its lopsided emphasis on legal sanctions did incur high fiscal costs and probably contributed to its quick demise.

risk of being cheated out of their capital. Their individualistic cultural beliefs, however, did not prescribe collective punishment of dishonest agents. Thus, they could not rely on network-based informal contract enforceability, such as that used by medieval Maghribi traders. Through trial and error, the Genoese managed to build an impersonal legal mechanism of contract enforcement through a "third-party" polity. Although more costly than network-based informal mechanisms, legal enforcement was not limited by the boundaries of ethnic or religious groups and did support market expansion. In the long run, the Western world surpassed the Muslim world.

In actuality, most institutional settings involve both formal and informal rules, coexisting either in congruence or in conflict. The third proposition points to a well-functioning institutional environment: "The close coupling between informal norms and formal organizational rules results in high organizational performance" (Nee and Ingram 1998, p. 34).[5] Organizational effectiveness results from effective informal norms absorbing enforcement costs. The cooperation of formal and informal rules is best illustrated by Huang's (1996, 2008) study of the Qing civil justice system in late imperial China. Despite popular belief to the contrary (e.g., Weber [1916] 1951), the justice system of imperial China did have codified statutes and procedures. Yet, in practice the Chinese legal system was a "Confucianized legalism" that intertwined legal codes with moral principles. "The Confucian political ideal was a moral society that would more or less govern itself. The state's role would be mainly limited to setting an example through its morally upright officials. Therein lay the origin of the legal ideal that society would settle its disputes without government interference, [and] that the state apparatus would defer to the societal mechanisms for dispute resolution" (Huang 2008, p. 26). Qing courts considered civil disputes "minor matters," and most such cases were handled by community/lineage-based mediation. With communities and kin groups absorbing the bulk of dispute resolution costs, Qing emperors were able to keep the formal state bureaucracy to a minimum.

With its colossal bureaucracy, the Communist Party State of China pushed the bureaucratization process a gigantic step forward. The informal, however, did not fade away. While all economic activities were centralized and bureaucratized, a patron-clientele network permeated the factory system. Walder (1986) characterizes the authority relationship in the state-owned factories as "principled particularism" that mixed political

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[5] Effective institutions are not always good institutions. If the informal norm is racial prejudice, social networks (e.g., the Ku Klux Klan) simply enhance racial discrimination.

commitment with personal loyalty and blended organizational goals with clientelist ties.

Informal institutions are also important in a "rule of law" country such as the United States, as demonstrated by Ellickson's (1986, 1991) study of trespassing disputes among cattle ranchers in Shasta County, California. Shasta County has a rather complicated set of laws of rights and liabilities regarding cattle trespassing, which most ranchers neither understand nor ever have to resort to. They go by a simple norm: ranchers should keep their animals from eating a neighbor's grass (Ellickson 1991, p. 53). When trespassing does occur, the victims rarely demand compensation for losses. On the contrary, the Shasta ranchers usually abide by the norm of being good neighbors and board stray cattle until a convenient time for the animals to be retrieved or returned. Because these rural residents interacted repeatedly and on multiple fronts, accounts balance over time (pp. 53–56). Obviously the effectiveness of these "welfare-maximizing norms" is supported by the close neighborhood networks. By contrast, when livestock-vehicle collisions occur on the Pacific Coast Highway, formal litigations are much more likely to be initiated. One of the reasons for this legalism is the "shallowness and shortness" of future relationships between parties involved (p. 94).[6]

Macaulay's (1963) classic study shows that American businessmen do not normally use legal means to deal with contract disputes either because of the high costs of lawsuits. Usually when disputes arise, parties involved try to patch things up through renegotiation and compromises. Lawsuits are kept as the last resort. Therefore, businessmen prefer to embed contracts in personal networks and govern contracts "in the shadow of the law" rather than by the law.

The fourth proposition pertains to the scenario in which formal rules collide with informal norms. This is the focus of my current analysis. Generally speaking, this is the most inefficient institutional setting because formal rules are unpopular and costly to enforce. As Nee and Ingram (1998, p. 36) put it, "When the organizational leadership and formal norms are perceived to be at odds with the interests and preferences of the actors in subgroups, informal norms opposing formal rules will emerge to 'bend the bars of the iron cage' of the formal organizational rules."

I should add two points here. First, informal norms themselves do not grow muscles to tussle with the strong arms of the formal laws. It is their enforcement agents that need to bend the iron bars. Since a norm is essentially a public good, its effectiveness depends on the ability of the

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[6] Even though Ellickson (1991) dubbed his observation of Shasta County "order without law," the Shasta County story really unfolds in the larger context of well-established property rights laws.

agents to organize collective action. Social networks facilitate collective actions and thus can function as an informal mechanism for resistance against formal rules. Second, the payoffs to social networks in such scenarios depend on the nature of the informal norms. If informal norms are productive, then social networks will increase the enforcement costs of formal rules but may have a welfare-promoting effect (such as facilitating economic growth). If the informal norms are dysfunctional (obsolete or oriented toward special interests), then social networks will not only increase the enforcement costs of formal rules but also increase uncertainty for human actions and hence the costs of social exchange.

This study aims at providing an empirical test of the fourth proposition by zooming in on the case of China's one-child policy. We have, on the one hand, the birth control policy that is strictly enforced by the state and, on the other, the millennia-old belief in continuing lineage bloodline through reproduction and multiplication. From the fourth proposition, we can derive a hypothesis that lineage networks should be able to raise birthrates by enforcing the pronatalist norms and bending the iron bars of the state birth control policy. The relationship between birthrates and the natalist norms is very specific and straightforward. An empirical verification of this hypothesis would corroborate my kinship network as a normative control argument (Y. Peng 2004) as well as lending support to the fourth proposition.

LINEAGE AND THE STATE IN CHINESE HISTORY

Lineage organization in Chinese history has gone through roughly three stages (Chang 2000; Feng 2005). The first stage started with the Western Zhou dynasty (11th century BC) and lasted until the end of the Warring States period (3d century BC). Emerging from tribal societies, the Zhou state constructed a feudal hierarchy according to patrilineal agnatic principles. The Zhou king (the son of heaven) parceled up the land and people into fiefs and awarded them to his princes and relatives and, to a lesser degree, nonkin tribal leaders who had played key roles in helping build the dynasty. The king was the head of both the feudal hierarchy and the royal lineage. Each vassal lord ruled his fief as an autonomous tributary kingdom within which to build his own sublineage or lineage branch.[7]

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[7] In order to maintain the stability of the feudal hierarchy, primogeniture was practiced in the Zhou period. For example, the king's firstborn son by the queen was the first in line to inherit the throne and principal lineage whereas other princes could become only vassal lords and build minor lineages. The relationship between the king and the vassal lords was modeled after the relationship between father and son or elder brothers and younger brothers. The idea was to keep the vassals and their subjects in their

Thus, the first feature of lineage organization during this period was its fusion with the state power (the *zongfa* system). The second feature was that ancestor worship rites, just as many other rites, conformed to the feudal hierarchical order:[8] while the king could build seven ancestral temples and worship his founding ancestor, dukes (*zhuhou*) were entitled to five ancestral temples and could worship forefathers up to the fifth degree; high officials (*dafu*), three ancestral temples and forefathers up to the third degree; and gentry, only one temple and forefathers of the first degree (father); plebeians were not supposed to build any ancestral temples and could venerate their fathers only in the living room (Feng 2005, p. 30).[9] Apparently, organizing lineages was the preserve for the royal families and nobilities.

This type of primitive agnatic political organization ceased to exist more than 2,000 years ago, when the Qin emperor, driven by military competition, replaced the feudal hierarchy with a more efficient bureaucratic hierarchy (Kiser and Cai 2003). In his process of empire building, he strategically broke powerful lineages, especially those of the conquered states, by relocating tens of thousands of households to the proximity of the capital city for close watch. The first emperor adopted a purely legalistic approach to governance and promulgated harsh laws to rule the newly unified land. Heavy taxation soon led to widespread peasant uprisings and a quick demise for the first empire. After the short-lived Qin dynasty, powerful clans were to reemerge and contest control over the state bureaucracy. This ushered in the second stage of lineage evolution.

places and prevent them from overstepping their ranks. Nevertheless, as the number of kingdoms proliferated, the Zhou royal family gradually lost control of the vassal states. Fraternal love gave way to political rivalry, and some vassal states started expanding and annexing neighbors. Eventually the dynasty sank into chaotic warring states (Qu [1936] 2005; Hsu 1965). After the collapse of the Zhou dynasty and dissolution of the feudal system, primogeniture was gradually replaced by the practice of relatively equal inheritance rights among male heirs.

[8] The Zhou had an elaborate body of rites governing every aspect of social, political, and economic lives. These rites were designed to reinforce the feudal hierarchy and were laid down in three official books of rites, the Rites of Zhou (*zhouli*), Ceremonial Rites (*yili*), and Records of Rites (*liji*) (see Ruan 2009). For example, the appropriate number of horses on chariots was clearly defined for each feudal rank: the king was entitled to six horses; dukes, four; officials, three; and literati, two; commoners were limited to one horse. In 2002 a six-horse chariot was unearthed accidentally during construction in Luoyang and was presumed to belong to one of the 25 eastern Zhou kings buried in the city (Dai 2004).

[9] According to the Book of Rites (see *liji wangzhi* in Ruan [2009]), the Zhou king should place the temple for his founding father (of any degree) in the center, flanked by six temples for his forefathers from the first to the sixth degree, three on each side. A duke should build the temple for his forefather of the fifth degree in the center, flanked by four temples of his forefathers of the first to fourth degree, two on each side, and so on.

The second stage of lineage organization lasted from the Han dynasty (3d century AD) to the Tang dynasty (10th century AD). The Han emperors inherited the Qin state structure by dividing up the empire into bureaucratic jurisdictions instead of feudal fiefs. But the Han state rejected the purely legalistic approach of the Qin government and softened its rule with Confucianism by embracing the latter as official ideology. Confucius idolized the Zhou practice of modeling the relationship between the ruler and the ruled as that of father and son and advocated moral teaching instead of harsh laws. Thus, this stage was to see the conflation of and conflict between patrimonial agnatic principles and bureaucratic meritocratic principles.

The most distinctive feature of lineage evolution during this period was the rise and fall of "great families" (*haozu*) and their fusion with the literati class (*shi*). Some of these great families came from old noble lineages that survived the cleansing by the Qin state, some new families of bureaucratic or intellectual breed grew into powerful lineages, and some new landlord families accumulated economic wealth and acquired cultural learning for their offspring. These "great families" became the new elite boasting aristocratic pedigrees and vying for political power, with some outlasting, outgrowing, and outshining the royal families. They enjoyed many privileges that the imperial court came to recognize. First, as literati they had preferential access to bureaucratic offices. Even though official titles were not hereditary, only the literati class had the privilege of recommending "talented and morally upright" candidates for offices. Subsequently, nepotism and corruption thrived. Second, they were exempt from labor levies, as a distinction from the commoners. Third, they managed their own internal affairs within the lineages without interference from the state. Fourth, they controlled membership into the literati class. The power of the literati lineages started to decline with the formalization of official examinations in the Sui and Tang dynasties. Throughout this period, lineage was mainly an upper-class phenomenon, and lineage activities in the populace seemed limited (Yan 2000, 2005; Zhao 2002).

The third stage started with the Song dynasty in the 10th century. Under the influence of neo-Confucians, the Song imperial state reconstructed the lineage organizations in the whole society (Ebrey 1986; Metzger 1986; Qian 1994). The lineage structures portrayed by early Western scholars, such as Weber (1951) and Freedman (1958), were heritages of this reconstruction. Neo-Confucian scholar-bureaucrats of the Song era, with Zhu Xi as the most prominent, perceived an affinity between ancestor worship and their central concept of filial piety (*xiao*) and decided to encourage the congregation and organization of lineages, first among the educated elite and then among the plebeians. Renowned Song scholars such as Fan Zhongyan and Ouyang Xiu started compiling genealogies, building an-

cestral halls, and managing communal estates. Lineage activities flourished quickly among the populace and reshaped the social fabric of the rural villages. By the 16th century (1563), the Ming royal court decreed to allow commoners to construct ancestral halls and to worship founding ancestors, thus formally recognizing a practice probably already widespread (Chang 2005, p. 22). In 1726, a Qing emperor (*yongzheng*) ratified the power of lineage elders to execute lineage members, for example, by caning or drowning of serious offenders of lineage codes or state laws. The imperial court even experimented with setting up semiofficial liaisons (*zuzheng*) within large lineage groups and then abandoned the program because of abuse (Feng 2005, pp. 51–70). Obviously, as the center of lineage activities shifted from the powerful elite class to the common people, the royal families no longer perceived the lineage as a political threat. The relationship between the lineage and the state had transformed from tension and conflict to cooptation and cooperation.

Huang (2008) points out that the state bureaucracies in late imperial China represented a "centralized minimalist" strategy to governance, with a patrimonial ruler on top of minimal bureaucratic machinery, leaving rural society largely in the hands of semiofficials, gentry, or lineages. For centuries, kinship organizations normally worked in harmony with rather than against the formal state bureaucracy. They performed some governmental functions such as mediating conflicts, administering justice, protecting the property and lives of their members, and even collecting taxes for the state (Huang 1993, 1996, 2008). Lineage groups normally try to avoid conflicts with the state. Lineage codes often specifically stipulate that kinsmen should be loyal to the emperors and abide by all state laws and statutes (Wang 1991; Feng 2005). This may not have been purely patriotic or voluntary since many imperial laws stipulate that the whole clan could be punished for crimes committed by one clan member, typically by nine degrees of association (*zuliang jiuzu*). Weber (1951) was largely correct in observing that Chinese villages were basically autonomous and self-ruled. From this observation he concluded that it was the clan power that prevented the formal state bureaucracy from penetrating the rural society. Recent historical studies would suggest, however, that lineage power did not confront or counterbalance the power of the state bureaucracy, at least not in the late imperial period. Rather, it was the imperial rulers who decided to encourage kinship organizations to grow as a supplement to state administration to avoid exhaustion of administrative resources and overstretching of central control. For the populace, it may be just as well. Dynasties rose and fell; emperors came and went. Lineages, however, were relatively stable and provided protection and security during turbulent times.

This period has also seen a shift of social economic center from the

North to the South and a shift of political center in the opposite direction. Lineage activities also shifted from North China to South China after waves of massive southward migration (Wang X. 2006). In the primitive, remote, and therefore peaceful South, the lineage became the only important "corporate actor" in villages, maintaining ancestral temples, managing communal land, operating schools, and extending cheap credits to kinsmen (e.g., Weber 1951; Freedman 1958). In the war-ravaged North, by contrast, lineage culture survived in a more diluted and weakened form. Except for a few prominent lineages such as the Confucius lineage in Shandong and the Bai Juyi lineage in Henan, kinship groups in the North usually did not own corporate properties such as temples, schools, and communal farmland, except perhaps shared ancestral grave sites, and were not nearly as effectively organized as their southern counterparts (Watson 1982; Huang 1985, pp. 232–37; Cohen 1990, 2005; Feng 2005).[10] Field researchers are, however, often reminded of the lineage congregations in North China once vibrant in the far-gone past by the cursory observation that many northern villages are named after a single surname but occupied by many different surnames, whereas many southern villages are dominated by a single lineage but named after geographical features. In my field trip to rural Jiangxi in 2006, I ran into inscriptions on ancestral halls claiming that their ancestral roots originated from some "great families of Shandong." According to historians, Shandong used to boast powerful lineages (Yan 2000).

The lineage system was to face the most serious and unprecedented challenges during the Communist era. Since the 1950s, the Communist Party waged deliberate assaults on lineages, especially in southeastern China, where lineages were strong and well organized. The Communist government confiscated lineage corporate properties, deprived lineage elders of their power, repealed lineage codes, and injected the ideology of class consciousness and class struggle to diffuse lineage identity. Consequently, the economic foundation and organizational structure of the lineage system were systematically dismantled and replaced with collective farms and grassroots administration (Wang 1991). During the collectivization campaign and the Cultural Revolution, ancestral halls (i.e., temples where tablets of ancestors are consecrated) were turned into offices,

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[10] Watson (1982) calls for clarification of terminology such as lineage, common descent groups, and clans. Kinship is a generic term. Lineage refers only to kinship groups that own corporate properties. Common descent groups refer to those kinship groups united by a common ancestor without communal properties, characteristic of North China. Clans refer to the association of several lineage groups under a real or fictive common ancestor. In Chinese language, the concept of family (*jia*) has two meanings: (1) the nuclear or extended family under the same roof and (2) a metaphor for lineage (*zu*).

schools, or storage rooms, if not destroyed; genealogy books were burned as feudalistic remnants; and of course, the *fengshui* of ancestral graves was disturbed. Parish and Whyte (1978) observe that even during this period lineages were weakened but did not disappear. The state purposively broke up strong lineages into different collective units, but lineage influence was still present in the grassroots administration, albeit in a more subtle way (pp. 301–16). Peasants in Guangdong kept the ancestral tablets at home and replaced those destroyed by Red Guards with new ones (pp. 263–64). Many genealogy books survived the Cultural Revolution in similar fashion (Wang 1991).

In 1978 Deng Xiaoping launched China on a long and arduous march toward a market economy. Collective farms were dismantled and households, again, became the basic units of economic activities. With a more liberal atmosphere following the market reform, ancestral halls were rebuilt, genealogies were recompiled, and annual pilgrimages to the ancestral grave sites were reactivated, usually with the ardent support of lineage members.[11] The ghosts of dead forefathers were revived, not to reinstitute the patriarchal power of the elders, but to create solidarity and identity among descendants, which can be used for new purposes. The new solidarity manifested itself in the political arena when the village election was introduced in 1988 and created legitimate channels for large lineage groups to control village offices. Researchers and policy makers were quite alarmed at the swaying of village election results by large kinship groups (Xiao 2001; Liu 2005). Lineage management also became more "democratized," with lineage councils replacing the personal power of elders (Wang 1991).

It should be noted that the revived lineage today is no longer an organized corporate actor, but a collective actor, that is, a community endowed with "natural" social capital for collective action and normative control. All the structural features of today's lineage brew normative capacities. Strong ties provide the bonds and obligations, cultural identity generalizes bilateral bonds and obligations into group loyalty, and leadership and density help mobilize these resources into capacities for collective action and normative control. The normative capacities are to be tested by a new state policy—the birth control policy.

[11] In my field trips to Jiangxi (2006), a township official complained to me that while they (the officials) experience great difficulty organizing public projects, the lineage has no difficulty at all collecting donations for building ancestral temples, compiling genealogies, or renovating ancestral graves. Indeed, ancestral temples are usually the best structures in those poor villages.

LINEAGE AGAINST BIRTH CONTROL POLICY

Bloodline perpetuation is at the core of the lineage culture in China. Keeping the bloodline going is so deeply ingrained in Chinese culture that it almost defines the very meaning of human existence, analogous to the pursuit of eternal salvation of the human soul in Christian culture or the Buddhist idea of reincarnation. Human existence is essentially short, miserable, and, throughout most human history, brutal. The biological limit of human existence is psychologically unsettling and socially disrupting. Human minds seek consolation in the idea of eternal life and eternal bliss after death (salvation) or the continuation of life through offspring (bloodline). Ancestral worship is a cultural construct through which descendants are united around this common goal. Lineage temples, genealogies, and ancestral tombs are the cultural artifacts. Lineage temples consecrate ancestral spirits. Genealogy reinforces identity and bonds among kinsmen. The Christian concepts of original sin and salvation are inherently incompatible with the genteel ideal of Confucianism (Weber 1951, pp. 228–29). Although blended with Buddhism since the Tang dynasty, ancestor worship is philosophically at odds with the idea of a Western paradise (Cohen 1988). The difference between salvation of the soul and continuation of the bloodline is best contrasted in the cultural meanings attached to the burial of the dead. Christians are buried in churches so that the souls of the deceased can go to heaven. Churches are not only places to worship God but also gates to heaven. Chinese are buried in good *fengshui* sites so that their offspring may prosper. The good *fengshui* of ancestral tombs is for the blessing of the offspring as well as for the well-being of ancestors in the afterlife.

Good burial geomancy enables the dead ancestors to extend postmortem assistance to their progeny (Li 1976).[12] In both northern and southern China, good fortunes or misfortunes of rural folks, including not being able to bear a son, are invariably attributed to the auspicious or ominous *fengshui* of ancestor burials. One ethnographic narrative from southern Jiangxi is particularly interesting and pertinent. In one thriving lineage branch a legend goes that there were once five brothers in the lineage 18 generations ago. A *fengshui* master pinpointed a "dragon" burial spot for the brothers, who agreed that whoever would die first would be buried there. When the youngest brother fell deathly ill, one elder brother committed suicide to beat his younger brother to the grave. As a result, his descendants proliferated and prospered (Liu 2000, p. 14). The story is

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[12] The idea of *fengshui* is rooted in the correlative thinking of the ancient times, i.e., cosmic forces (stars, mountains, rivers, etc.), and human affairs are correlated. The geomancy of ancestral tombs is important because cosmic energies can be channeled through ancestral bones to benefit or harm the living offspring.

likely apocryphal. But it does make the point that the essence of ancestor worship is the continuation of bloodline. A sinister spin of this idea is the report that sons abuse their elderly parents by denying them food and care, only to give them an extravagant burial after death (Zhang 2006).

The pronatalist norms of the lineage and the official Confucian ideology had been mutually reinforcing. As pointed out earlier, lineage culture was reconstructed by new Confucian scholars and officials. The affinity between bloodline perpetuation and the Confucian virtue of *xiao* is demonstrated in the famous quote of Mencius: "Of the three heinous unfilial acts, failure to produce posterity is the worst" (Mengzi 2009, p. 50).[13] In other words, the best way to perform obeisance to one's ancestors is to produce male offspring. In Chinese terminology, the family bloodline is also called *xianghuo*. Literally, it means the burning of incense. Only through offspring can one make sure that the incense venerating ancestral spirits will be kept alive and abundant.

Thus, when the Communist government contravened the fundamental norms of bloodline continuation of the lineage system with its antinatalist policies, conflict between lineages and the state power, overt or covert, is inevitable.

Son preference is the most important factor behind Chinese farmers' resistance to birth control policies. Farmers have their good reasons. Culturally, the Chinese lineage is patriarchal and patrilineal. Only male descendants can carry on the family name. The genealogy of lineage groups records only the names of sons and daughters-in-law, but not daughters who will marry out of the lineage, given the sweeping exogamy norm, will produce heirs for their husbands, and will be buried after death in the ancestral grave sites of the husbands' lineage. Thus, when it comes to the desirable number of sons, the more, the merrier. One son is a bare minimum for keeping the incense burning. Even today, some old people still believe that a broken patriline is worse than death itself.

Pragmatically, sons are responsible for taking care of elderly parents, their economic well-being and daily life. Married-out daughters may help, but their main responsibilities are for their husbands' parents.[14] Adopted

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[13] The original text of Mencius does not explain what the other two unfilial acts are. According to Annotated Mencius (see *mengzi zhushu* in Ruan [2009]), the other two unfilial acts are not seeking offices so as to leave your parents in poverty and not pointing out your father's misconduct so as to keep him in unrighteousness.

[14] According to Wolf's (1974) observation of rural Taiwan, if an unmarried daughter dies, she faces the pathetic prospect of becoming a wandering ghost. Her name tablet will not be placed alongside that of her natal ancestors because it is considered shameful and unsightly. By contrast, if a son dies young, his name tablet will be placed in the ancestral hall and venerated (pp. 147–50). Similar practices are reported in other parts of southeastern China.

sons, unless from within the same lineage, can perform the economic function of old-age care, but not the cultural function of carrying on the family name. Often adopted nonagnate sons are not recorded in genealogy (i.e., the line is broken), have to endure ridicule and face restrictions in inheriting property such as land, and may not even be buried after death in the ancestral grave sites (Watson 1975; Wolf and Huang 1980; Qian 1994; Szonyi 2002).[15] Uxorilocal marriages encounter similar hurdles in lineages with corporate holdings (Cohen 2005, pp. 163–64).

The Chinese Communist Party has been propagating gender equality for decades. Great strides have been made in urban and rural areas (Greenhalgh and Winckler 2005; Zhang 2009). Yet, the many routine practices and policies during and after the collective era inadvertently reintroduce or reinforce gender bias in the villages. For example, the party encourages women to shoulder "half of the sky" by participating in field labor alongside men, but they were paid less. Their labor force participation did not produce economic independence as expected because payments were distributed to households as a whole. Patrilocal residence and virilocal marriages were still the norm, making daughters temporary residents in their natal homes (Parish and Whyte 1978). Old-age care is still the responsibility of the families (therefore, sons), especially after decollectivization, when rudimentary collective welfare is gone. Even the practices of birth control themselves perpetuate gender bias, such as assigning the unpopular and unrewarding job of family planning to women cadres (Murphy 2003).

The state tries to accommodate the pervasive son preference in rural areas by allowing rural couples a second child if their firstborn is a girl. For urban couples, the one-child policy is enforced to the letter. Even if we assume that all rural couples are content with a single son, 25% of them will end up with two girls and may want to have a third, fourth, or more pregnancies until they get a boy.[16] This is where peasants and the state power clash. Dramas and tragedies abound. Against the backgrounds of suspected and reported female infanticides and egregious mistreatment of baby girls, the numerous abandoned baby girls seem to be the lucky ones. While international human rights groups are concerned with forced abortion on the part of the Chinese government, Chinese

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[15] There are regional variations and "modern adaptations" regarding adoption practices. For instance, Feng (2005) reports that one lineage in Zhejiang did keep entries of adopted nonagnate sons in its genealogy, but they were marked with different ink (p. 191). In my own visit to a lineage in Zhejiang (Wenzhou), I was also told that adoption was recorded differently in genealogies.

[16] In 2006 in rural Jiangxi, I ran into a family with six children, five girls and one boy at last. Zhang (1999) reports observing two families with five girls in one North China village.

farmers have been quietly engaging in sex-selected abortions since ultrasound tests became available in the late 1980s. In the early 1990s scholars in China began to warn of looming unbalanced sex ratios (Zeng et al. 1993). Official statistics show that sex ratios at birth have been rising since the early 1980s. In 1982, the sex ratio at birth was 108.5 boys for every 100 girls, slightly higher than the normal range of 103–107; by the year 2000 the ratio jumped to 116.9 (National Bureau of Statistics 2004; Lavely 2001; Banister 2004; Liu and Feng 2008). It should be noted that the sex ratio of the first birth group in 2000 was 107 whereas that of the second and higher birth orders is dramatically off chart, more than three boys for every two girls (National Bureau of Statistics 2004; Lavely 2001; Greenhalgh and Winckler 2005, p. 266).

The absolute numbers of "missing women" are staggering: according to the year 2000 population census, the cohort born between 1980 and 1999 is short of 12.8 million women (Cai and Lavely 2003). Not all of these women are truly missing because some are simply hidden from official statistics. Cai and Lavely estimate that roughly one-third of the 12.8 million are only nominally missing. That leaves about 8.5 million truly missing. Estimates of the exact number of missing girls vary, but the consensus is that a serious problem of "marriage squeeze" is looming on the horizon (Li, Jiang, and Feldman 2006; Liu and Feng 2008). Most of them are truly missing as a result of sex-selected abortion, and the impact of female infanticides should be negligible (Chu 2001). The unbalanced sex ratio is obviously caused by son preference but exacerbated by the rigid birth control program (Banister 2004; X. Peng 2004; Greenhalgh and Winckler 2005).[17]

The birth control policy is carried out via a multilevel bureaucracy down to the village level. Pregnancies, births, and sterilization are all "planned" by a quota system. Rural couples need to obtain authorization for getting pregnant or giving birth. In order to push the highly unpopular policy through, the central government made fertility control a "one vote veto" criterion in cadre evaluation and promotion. That is, if a region could not meet its birth control quota, its chief administrator would be held accountable regardless of other performance indicators, jeopardizing his or her job and career (Zeng 1996; Greenhalgh 2005). Despite the pressure, violations are daily routine. County and township officials have to resort either to high-handed means of forced sterilization and forced

[17] Son preference is observed in many East and South Asian countries such as India, South Korea, Vietnam, Pakistan, and Bangladesh (Banister 1995; Park and Cho 1995; Clark 2000; Das Gupta et al. 2003). Thus, the problem of missing women is not unique to China. It is reported that over 100 million women are missing worldwide (Sen 1990; Croll 2001).

abortion or, alternatively, to the more "humane" methods of manipulating statistical reporting. Zhang's (1999) ethnographic study of a North China village in Hebei portrays a vivid picture of the microdynamics of birth control. The implementation of birth control regulations tended to be arbitrary and depended on the negotiations of village cadres with township cadres on the one hand and villagers on the other. Village cadres, from within the village, were usually sympathetic to villagers who wish for a son and tended to go soft with violators. Cadres from higher levels such as the township family-planning agency, who came to the village periodically during campaigns and crackdowns, were more inclined to enforce the policy to the letter. Thus, the policy implementation was a process of negotiations and compromises and varied from village to village, family to family.

If the argument that lineage networks help enforce informal norms is correct, we should expect the lineage to be able to bend the iron bars of the birth control policy and help its members to have more children. I propose that kinship networks may increase birthrates via both internally reinforcing the profertility norms and externally resisting the state's effort to limit fertility. Institutions restructure incentives (North 2005). Likewise, the normative capacities of the lineage reinforce the incentives for bloodline continuation. The cultural practices of patriarchal ancestor worship, patrilineal genealogy, and discrimination against adoption and uxorilocal marriages combine to portray male heirs as not just a preference but almost a necessity. Daily interactions and competitions between lineages, sublineages (*fang*), branches (*zhi*), and households transform reproductive behavior into a power play. Thus, young people who grow up in villages without lineage pressure will be more likely and quicker to embrace the one-child policy.

Lineage may help farmers to resist the state power through policy circumvention or collective resistance. Policy circumvention refers to the scenario in which large lineage groups take control of the village administration and do not rigorously implement the birth control policy. Village leaders with kinship ties "would be less likely than leaders elsewhere to push a campaign which some kinsmen may oppose" (Parish and Whyte 1978, p. 152). They may only pay lip service to the policy and try to implement it to the minimum degree their superiors in the township demand of them and turn a blind eye to the policy-breaching but norm-abiding behaviors of their kinsmen. Apprehension of accusation of being unfair may oblige them to extend the same courtesy to nonkin villagers.[18]

[18] Not all village cadres are benign. These petty officials wield a tremendous amount of power over the peasants, and abuse of power is commonplace. For example, I have run into a deputy village head who blatantly and persistently demanded "a lotta money," as if ordained by his God.

Collective resistance refers to network-based resistance against the enforcement agents of the birth control policy. A lineage group will typically stand united behind its members who are pressured by family-planning officials from other lineage groups or from higher up. When dealing with policy violators backed by a lineage group, township and village cadres have to think twice before employing high-handed measures for fear of retribution. In Zhang's (1999) account of a crackdown on birth violations, township cadres picked one couple from a "small clan" to make an example of and forced the wife, who had already given birth to a son and a daughter, to be sterilized (p. 227). Even if the village cadre belongs to a larger lineage group, their own group probably would not stand behind their implementing an unpopular policy through distasteful means such as dragging women to clinics for abortion or sterilization. Village cadres sometimes collude with villagers resisting family-planning officials from higher up (Guo 2010).

One story that I picked up during my field trip to Jiangxi is particularly telling. One woman with an "unauthorized" pregnancy was pressured to have an abortion by the township family-planning officials. She went into hiding in her mother's home in a different township. Her natal family happened to belong to a large lineage group. When the officials from her husband's township tracked her down to her natal village, her lineage brothers and cousins united behind her and beat up pretty badly the "outside" officials who, in the eyes of the kinsmen, did not really have jurisdiction in their township and therefore could be roughed up without serious retributions.

DATA, MEASUREMENT, AND METHOD

My unit of analysis is administrative villages. To give some idea of a village, an average-sized village has 439 households and a population of just under 2,000. The largest village in my data set has a population close to 10,000 and the smallest village 194 people (table 3).

I use two sample surveys collected by sociologists at the Chinese Academy of Social Sciences in 1993 and 1994. The timing of the surveys is pertinent for the current analysis because peasant resistance to the one-child policy was still at its peak level in the early 1990s. In recent years more and more young rural couples start to embrace the birth control policy and want a smaller family (Zhang 2007).

The 1993 survey sampled 259 villages from 15 counties and the 1994 survey sampled 119 villages from seven counties. The 22 counties were selected by "experts" with an eye to representativeness, and the villages in each county were randomly sampled on a proportional basis (for a

TABLE 3
Descriptive Statistics of Chinese Villages, 1991 and 1993

	Min	First Quartile	Median	Mean	Third Quartile	Max
Population	194	1,098	1,587	1,844	2,405	9,663
N of births in 1991 and 1993 ...	0	11	20	25	33	173
Female births	0	5	9	11.8	15	78
Male births	0	6	10	13.5	19	95
Crude birthrates (per 1,000)	0	9.19	13.45	13.04	17.14	30.75
Number of newlyweds	0	5	11	15.5	20	97
% largest lineage group	0	0	14.8	21.7	29.1	100
% top six lineage groups	0	0	48.2	46.0	78.3	100
Kinship homogeneity index	0	.005	.067	.157	.184	1
% finished senior high school ...	0	3.4	6.7	9.4	11.3	63
% emigrants over total labor	0	1.4	4.2	8.8	13.4	50.9
% of nonfarm employment	0	0	1.4	7.1	6.7	271.6
Gross value of output per capita (yuan)	13	668	1,003	1,621	1,712	52,120

Note.—N = 359 villages in surveys administered in 1993 (1991 data) and 1994 (1993 data).

description of the survey, see Shen, Chen, and Gao [2000] and Shen, Chen, and Feng [2001]).[19] After 18 villages with missing or outlying values on key variables were deleted, 359 valid cases remained for analysis.

Measurement

Nearly identical questionnaires were used in both surveys and included questions regarding the number of births in the prior years and the number of households belonging to the top six lineage groups. The key variables are defined in the following paragraphs, and basic statistics are reported in table 3.

Births refer to the count of reported live births, male and female, in the whole village in 1991 for the 1993 survey and in 1993 for the 1994 survey. The ratio of births over village population measures crude birthrates. Village population is defined as the total number of people registered

[19] The 22 counties are Zhangwu and Haicheng (Liaoning); Huichun (Jilin); Anda (Heilongjiang); Zhangjiagang (Jiangsu); Tianchang (Anhui); Tongxiang (Zhejiang); Xingguo, Gaoan, and Xunwu (Jiangxi); Sangzhi and Yizhang (Hunan); Yichang (Hubei); Xinhui, Xingnin, and Meixian (Guangdong); Xichang (Sichuan); Lunan (Yunnan); Tongguan (Shaanxi); Wuzhong and Guyuan (Ningxia); and Huocheng (Xinjiang).

in the administrative villages. The sample villages report an average crude birthrate of about 13 babies per 1,000 population (table 3).[20]

It is worth noting that the sex ratio at birth in the sample villages is 114.4 boys per 100 girls in these two years (table 3). According to the national 1 per thousand population change surveys (National Bureau of Statistics 1992, 1994), the sex ratio for the 0-year-old age group in the rural population was 119.75 in 1991 and 117.47 in 1993. These figures are higher than that in our sample data. Considering, however, that official statistics tend to underreport female births (Cai and Lavely 2003; Liu and Feng 2008), the sex ratio in our sample data is probably closer to the truth.

Kinship networks have three measures. The first is the proportion of households that belong to the largest lineage group in the whole village. In the current sample of 359 administrative villages, at one extreme, five villages uniformly share the same surname (i.e., the whole village belongs to the same common descent group) and another 10 have over 90% of the households belonging to the same lineage group; at the other extreme, about a quarter of the sample villages (95 cases) do not report any lineage groups and are subjectively assigned a value of one for the largest linear group. On average, 22% of the households belong to the largest lineage group and 46% belong to the top six groups. As a lineage system is patrilineal and patriarchal, it excludes marital ties of wives and daughters, which are another important source of social capital in rural China.

The second measure can be called the *kinship homogeneity index*. It takes after the Herfindahl index of concentration (Baker 1990; Uzzi 1999) and is defined as $H = \sum (P_i^2)$, where P_i stands for the proportion of households belonging to the ith lineage group. Note its relationship with the index of social heterogeneity, which is defined as $H' = 1 - \sum (P_i^2)$, where P_i stands for the proportion of the population in the ith group (Blau and Schwartz 1984). The village survey used in this article collects information of up to six lineage groups. Only 14 villages indicate having more than six lineage groups without further details. Households not connected with any lineage group are arbitrarily assumed to be unrelated to each other. Thus, if a whole village belongs to a single lineage, then $H = 1$, the maximum. If a village is divided equally between two lineage groups, then $H = 0.5^2 + 0.5^2 = 0.5$. If no lineage is reported, then $H = \sum (1/T^2) = 1/T$, where T stands for the total number of households. The minimum boundary of H is zero. This index of homogeneity is substan-

[20] Ideally I would like to measure net birthrates by counting the number of newborns over several years and divide it by the number of women of childbearing age in the village. Unfortunately, the data set does not report the number of births over multiple years. Neither does it report the age-sex breakdown of the village population.

tively similar to but semantically less intuitive than the proportion of the largest lineage group. Roughly, high values indicate dominance by a single lineage, low values indicate the absence of lineage groups, and medium values correspond to a coexistence of multiple lineages.

As a third measure, *the presence of ancestral halls* indicates lineage solidarity and organizational strength and is measured by three categories: (1) never present, (2) present before 1966 (the year when the Cultural Revolution started) but no longer present, and (3) currently standing. Table 4 gives the basic frequencies of the presence of ancestral halls and genealogies. Only 14% of the 359 villages had at least one ancestral hall at the time of the survey and another 17% had one or more before 1966. Nineteen percent of the sample villages had genealogies at the time of the survey and another 25% had one or more before 1966. Even though genealogy books are the symbolic reconstruction of the lineage bloodline, they are usually compiled at the supravillage level, often jointly by all lineage branches in the whole county or even wider areas, and therefore the presence of genealogies does not necessarily imply the existence of a strong lineage in a particular village. Ancestral halls, by contrast, are usually constructed at the village or subvillage level and indicate the strength of lineage networks within the village. In preliminary analyses, the presence of past or present genealogies does not have any impact on birth. Therefore, only one pair of dummy variables for ancestral halls are retained in the following analysis, one for presence before 1966 and the other for current presence.

The following control variables may be relevant for birthrates but not key for the current analysis.

Number of newlyweds is the total number of married couples in the surveyed year. This variable is used as a proxy for the fecundity of the village population. The number of women of childbearing age would be the conventional measure of fertility potential, but the information is not available in the data set.

Human capital stock is measured as the proportion of people with at least senior high school or equivalent education in the village labor force. *Village total labor force* is defined throughout the article as the number of all able-bodied laborers with household registration (*hukou*) in the administrative villages, including those working as migrants in the cities. On average, 9.4% of the village labor force had completed junior high school. We expect education to reduce birthrates by weakening son preference.

Ratio of emigration is computed as the number of migrant workers from the village divided by the village total labor force. These emigrants spent most of the year working in cities and industrialized areas as transients and experienced great difficulties settling down in their place of

TABLE 4
ANCENTRAL HALLS AND GENEALOGY IN DIFFERENT TIME
PERIODS

	Ancestral Hall	Genealogy
Never present	247 (68.7)	204 (56.8)
Present before 1966	62 (17.3)	88 (24.5)
Present at current time ...	50 (14.0)	67 (18.7)
Total	359 (100)	359 (100)

NOTE.—N = 359 villages surveyed in 1993 and 1994. Numbers in parentheses are percentages.

work due to policy restrictions against migration. They were still registered as residents in their native towns and villages and, at least in theory, were subject to the authority of local birth control officials (Solinger 1999). On average, about 9% of the village labor force was working outside the village. One village reports half of its labor force as emigrant workers; 43 villages do not report any out-migrants (table 3). The relationship between emigration and fertility is rather complex. On the one hand, it may reduce birthrates because presumably migrant workers, after staying in the city for some time, may take on more urban attitudes about the ideal number of children and may be less biased against female babies. On the other hand, their mobility and higher earnings may enable them to hide "unauthorized" pregnancies, give birth to "unplanned" babies, or afford fines for such violations.

Nonfarm employment is used as a measure of rural nonagricultural development. It includes the self-employed (*getihu*) and the employees in private and collective enterprises. This variable is highly skewed to the right since most villages in the sample had few nonfarm businesses or industries whereas a couple of the villages had nonfarm employment larger than its own (registered) labor force. Highly industrialized villages usually attract migrant laborers from other localities. In the most industrialized village of the current sample, its nonfarm employment was 2.7 times its own native labor force (table 3).

Output per capita is measured as the gross value of output per capita for the surveyed year. It indicates the local level of economic development. Economic development may reduce birthrates by changing people's values or increase birthrates by providing farmers with more financial resources (to pay fines or bribes). As log output data are typically lognormal, this variable enters the regression in logarithm.

Urban proximity is measured by the log distance between the village and the nearest city. This variable is included as a proxy for urbanization.

County fixed effects are included in the regression to control for regional variations in the implementation of the birth control policy and to correct

for the two-stage sampling design of villages nested within counties. There are substantial regional variations in birth control policies and practices, reflecting differences in population density, ethnic composition, administrative capacities, and so forth. Ethnic minority groups are subject to less stringent fertility rules and tend to be weak on kinship organizations since lineage is essentially a Han culture. Ethnic composition varies widely from county to county. As the lowest level of government with a legislature, the county is an important actor both on the national stage and in peasant daily life. Controlling for county fixed effects should control for most of the regional spurious effects. Even though the county government is an important enforcer of the birth control policy, it is the tug of war between lineages on the one side and township and village officials on the other that we will explore here.

Statistical Modeling

Instead of directly modeling birthrates, I model (log) numbers of births as the dependent variable with log population as a control variable. Count data are usually estimated with either a Poisson model or a negative binomial model. Poisson distribution is more restrictive than negative binomial distribution because it assumes that the variance equals the mean. As the count of births in Chinese villages has many zeros and may therefore be overdispersed, I assume a negative binomial distribution. The negative binomial regression model is specified as

$$\ln \hat{Y} = \alpha + \beta \mathbf{K} + \gamma \mathbf{X} + \delta \mathbf{C},$$

where $\hat{Y}$ stands for predicted number of births; $\mathbf{K}$ stands for measures of kinship networks (i.e., the proportion of households belonging to the largest lineage group, kinship homogeneity index, and the presence of ancestral halls); $\mathbf{X}$ is a vector of controlled variables including log population, log number of newlyweds, proportion of laborers with at least senior high schooling, log ratio of emigration, log ratio of nonfarm employment, and log distance from the nearest city; and $\mathbf{C}$ stands for a vector of 21 dummy variables for counties. Note that when we subtract both sides of the equation by log population, the left-hand side becomes log predicted crude birthrates. All statistical analyses were conducted in SAS.

RESULTS

Table 5 reports estimates of four negative binomial models. All models have the same set of control variables and differ only in measures of lineage networks. The first model uses the proportion of households be-

TABLE 5
NEGATIVE BINOMIAL REGRESSION OF INFANT BIRTH COUNT IN CHINESE
VILLAGES

	(1)	(2)	(3)	(4)
Intercept	−2.961***	−2.985***	−2.630***	−2.636***
	(5.43)	(5.49)	(4.82)	(4.85)
% largest lineage group (× 10)	.044***		.040***	
	(4.02)		(3.65)	
Kinship homogeneity index		.505***		.474***
		(4.15)		(3.94)
Presence of ancestral hall before 1966			.079	.082
			(1.11)	(1.17)
Presence of ancestral hall at current time			.298**	.310***
			(3.24)	(3.41)
Log total village population	.804***	.811***	.750***	.755***
	(6.94)	(7.03)	(6.50)	(6.59)
Log number of newlyweds, ln(x + 1)	.273***	.276***	.276***	.279***
	(8.78)	(8.89)	(8.98)	(9.12)
% labor force finished senior high (× 10)	.067*	.066*	.078*	.077*
	(2.18)	(2.14)	(2.54)	(2.53)
Log % of emigrants over labor, ln[(x + 1)/L]	−.004	−.004	−.005	−.006
	(.22)	(.28)	(.32)	(.36)
Log % of nonfarm employment, ln(x + 1/L)	.029	.036	.008	.014
	(.008)	(.35)	(.10)	(.014)
Log gross output value per capita	−.015	−.015	−.019	−.020
	(.46)	(.47)	(.62)	(.64)
Log distance from city	.001	.003	−.010	−.008
	(.00)	(.10)	(.36)	(.32)
County fixed effects (χ^2, $df = 21$)	(113.5)***	(115.8)***	(122.1)***	(125.5)***
−2 log likelihood	22,635.2	22,635.7	22,640.6	22,641.7

NOTE.—$N = 359$ villages surveyed in 1993 (1991 data) and 1994 (1993 data). Figures in parentheses are the absolute values of z-ratios except where noted otherwise. The term L is total native labor force in a village.

* $P < .05$, two-tailed.
** $P < .01$.
*** $P < .001$.

longing to the largest lineage group, and the second model replaces it with the kinship homogeneity index. The third and fourth models augment models 1 and 2 by adding the dummy variables for prior and present existence of an ancestral hall. Main findings from these models are summarized below.

First of all, both the kinship homogeneity index and the proportion of the largest lineage group exhibit a consistently significant impact on births in all the models. Comparing model 1 with model 2 and model 3 with model 4, we see that alternating the homogeneity index and the proportion

of the largest group produces virtually identical model statistics.[21] Controlling for the existence of ancestral halls only marginally reduces the coefficient estimates of these two density measures. According to the estimates in model 1, for example, every 10% increase in the proportion of the largest lineage group is expected to increase the number of births by 4.4%. A village with all households belonging to the same lineage is expected to have 55% ($\approx e^{.044 \times 10} - 1$) more births than villages without any lineage, other things equal. On average, lineage networks have increased crude birthrates in the sample village by about 10% ($\approx e^{.044 \times 2.17} - 1$), ceteris paribus.

Second, the presence of an ancestral hall at the current time has a fairly large impact on the number of births. Preexisting ancestral halls that have been destroyed do not seem to have any significant effect. According to estimates in model 4, villages with currently standing ancestral halls are expected to have 36% ($\approx e^{.31} - 1$) more births than villages that never had any ancestral halls, other things equal. The preservation or reconstruction of ancestral halls indicates the solidarity and strength of the lineages that enabled the villagers to flout the birth control authorities.

Third, regarding other control variables, please note the following:

1. Population size and the number of newlyweds both show positive and significant impacts on births, as expected. Since information on the age-gender structure of the village population is unavailable, the number of newlyweds is the next best proxy for the village's fecundity. Controlling for this variable allows us to approximate net birthrates. Note that the coefficient for the log population on the right-hand side becomes negative after subtracting log population from both sides of the equation. This shows that larger villages tend to have lower birthrates, probably reflecting stronger grassroots administrations and closer monitoring of these villages.

2. The proportion of high school graduates shows a significant positive impact on birthrates. The positive sign is unexpected and needs further investigation.

3. The coefficient estimates for the ratio of emigration, nonfarm employment, gross value of output per capita, and distance from the nearest city all turn out to be minimal in size and statistically insignificant. Clearly, these variables have little impact on fertility variation across villages.

[21] I tested a curvilinear relationship between the kinship homogeneity index and birth rates by adding a square term of the index to the equation, because villages with multiple lineages competing might have particularly high or low birthrates. The square term turns out insignificant.

CONCLUSION

All Chinese peasants wish to have more children, especially a son, both because of the cultural belief in carrying on the family line and because of more practical considerations such as old-age care or household economics. They differ, however, in the degree to which they internalize these beliefs and the extent to which they can resist the state's birth control policy. Villagers with the support of lineage networks are in a better position to resist, circumvent, and delay "embracing" the one-child policy, whereas villagers without such support may have to be more compliant, willingly or unwillingly, with the state power. Data analyses above show that villages with strong lineage networks tend to have higher birthrates than those without. The finding demonstrates the normative capacity of the lineage to counteract an unpopular law and enforce an ancient cultural norm.

Compared with the large impact of lineage networks on entrepreneurship reported earlier (Y. Peng 2004, 2005), the impact of lineage on birthrates is substantial but relatively small. The different impacts reflect differences in the clarity of state policies and rigor of enforcement. In terms of the rights of private entrepreneurs, the state's policies were ambiguous, inconsistent, and conciliatory. Thus, peasants' informal norms regarding private property had a large role to play in defining the institutional environment and kinship networks played a key role in enforcing the informal property rights. In the case of family-planning policy, the state has been unambiguous and unwavering and has used "an iron hand" in implementing it. The "iron bar" of the one-child policy can be bent only to a limited degree. The size difference in the network effects corroborates a general thesis proposed at the beginning of the article: that the normative capacity of social networks should be most valent when formal rules are absent, neutral, or ambivalent and cultural norms alone define institutional environment.

Generally speaking, the efficacy and valence of the normative capacity of social networks should be at their greatest when formal institutions are poorly defined or weakly enforced. When formal laws are clearly defined and effectively enforced, then the role of the social network depends on whether the norms it supports are in congruence or conflict with the formal laws. In the situation of congruence, formal laws reinforce informal norms and social networks play the supplementary role of subsuming the costs of formal enforcement. In the situation of conflict, social networks increase the costs of formal enforcement and formal laws limit the normative capacity of social networks. In China's birth control scenario, even though the state power is overwhelming and state policy prevails over farmers' fertility preferences, lineages reduced the admin-

istrative efficiency of the state by increasing the enforcement cost of family planning. To the extent to which family planning has been successful, the cost to the state is not only the drop in administrative efficiency but also the loss of legitimacy in the eyes of the peasantry.

The lineage organization in rural China is culturally unique and historically particularistic, but its normative control function is not. In terms of functionality, there are many similarities between lineage organizations and religious communities such as Christian churches. Both supplement and sometimes substitute for the formal institutions. Both keep individuals in line through reinforcement of individual beliefs (such as preaching and daily interaction) and collective sanctions (such as respect or gossip, adulation or ridicule, support or excommunication). Glorifying one's ancestors can be a powerful incentive for actions of *xiao* and propriety, just as the ideas of heaven and hell can be efficient in inducing righteous and honest behaviors. Reward in heaven and damnation in hell do not cost much in this world, except perhaps donations to churches. Using a cross-national data set, Barro and McCleary (2003) find that the proportion of population believing in hell has a positive impact on national growth in gross domestic product. Reanalyzing the same data, Young (2009) reports that the religiosity effect holds only for Asian and African countries and countries with poor data quality (i.e., less developed countries). Hence, Young brushes aside the relationship between economic growth and religiosity as a technical flop. On the basis of my argument above, I would offer a substantively more sensible interpretation. Countries with poor data quality are also those less developed both economically and legally. Informal normative control has greater valence when legal institutions are weak. Thus, Young's finding of an interaction effect simply corroborates a substantive point in this article.

The finding of the normative capacities of the lineage networks is therefore generalizable to other types of social networks such as religious, neighborhood, or professional networks. Informal institutions consist of two elements: informal norms and enforcement mechanisms. Norms are part of the symbolic system of cultural values and behavioral codes, both formal and informal. Daily social order is not enforced by a policeman at every street corner but by the people themselves, through social networks, and, in some dramatic cases, through public media. Social networks are endowed with the capacities for normative control because social ties ease information flow and facilitate collective actions. Such enforcement mechanisms are cost-effective because costs are largely absorbed in daily interactions.

All societies believe in honesty, trustworthiness, and fairness. But these norms are observed to greatly varying degrees across societies. A cultural norm is effective only to the degree to which it is enforced. Good norms

are useless unless practiced, just as good laws are toothless unless policed. In a community of "strangers," many norms are hard to enforce, just as written laws can be ineffective if the police force is weak and the judicial system corrupt. It is social networks that make a norm effective, either through reinforcement of personal beliefs or through external collective sanctions.

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