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## Journal of Comparative Economics

journal homepage: [www.elsevier.com/locate/jce](http://www.elsevier.com/locate/jce)

# The clan and the corporation: Sustaining cooperation in China and Europe<sup>☆</sup>



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## ARTICLE INFO

### Article history:

Received 22 September 2015

Revised 12 December 2016

Accepted 22 December 2016

Available online 6 January 2017

### Keywords:

Institutions

Culture

China

Europe

Economic development

Economic history

## ABSTRACT

**Greif, Avner, and Tabellini, Guido**—The clan and the corporation: Sustaining cooperation in China and Europe

Over the last millennium, the clan and the corporation have been the loci of cooperation in China and Europe respectively. This paper examines – analytically and historically – the cultural and institutional co-evolution that led to this bifurcation. We highlight that groups with which individuals identify are basic units of cooperation. Such loyalty groups influence institutional development because intra-group moral commitment reduces enforcement cost implying a comparative advantage in pursuing collective actions. Loyalty groups perpetuate due to positive feedbacks between morality, institutions, and the implied pattern of cooperation. *Journal of Comparative Economics* 45 (2017) 1–35. Stanford University and Bocconi University, United States.

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## 1. Introduction

Although we often take it for granted, the state as we know it is a relatively recent institution. How was society organized when the state was much weaker or nonexistent? What social organizations substituted the state in the provision of public goods? These general questions are important not just for historical reasons, but also for understanding the functioning of the modern state and how it evolved from previous organizations.

In this paper we contrast two social organizations that emerged in pre-modern China and Europe respectively: the clan and the corporation. Roughly speaking, the clan is a kin-based organization consisting of patrilineal households that trace

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their origin to a (self-proclaimed) common male ancestor.<sup>1</sup> The corporation is a voluntary association between unrelated individuals established to pursue common interests. The foremost historical example is the independent city, others are guilds, communes, and business associations.

The clan and the corporation performed similar functions: they sustained cooperation among members, regulated interactions with non-members, provided local public or club goods, and coordinated interactions with the market and with the state. Yet, they were built on very different criteria and operated quite distinctly. Cooperation inside a clan exploits reciprocal moral obligations and personal interactions, whereas corporations rely on generalized – and thus weaker – moral obligations supplemented by impersonal enforcement procedures.<sup>2</sup>

What explains the emergence, expansion, and perpetuation of different social organizations in these two parts of the world? How did they influence the evolution of state institutions, and how did they interact with the market? These are the questions addressed in this paper. Our main insight concerns the mutual reinforcement of cultural traits, social organizations, and institutions. Distinct initial conditions in cultural traits, at a critical historical juncture, facilitated the emergence of different social organizations. Their subsequent proliferation reinforced their distinct cultural traits and fostered the development of complementary private and public order institutions. This contributed to a divergence of culture and institutions between China and Europe that persists in modern times.

The wide scope of our analysis forces us to examine long periods of time and to compare broad social systems. For this reason, we rely on a mix of theory, quantitative evidence, and historical narrative. With the help of the theory, we identify key features of social organizations and cultural practices, and derive specific predictions about their equilibrium interactions. We then turn to history to examine when the bifurcation began, why, and to what extent.

To quantify the origin and diffusion of clans through time, we created a database from the recently published and most comprehensive genealogy register (Wang, 2008) of more than 50,000 genealogies. The major undertaking of creating the database was taken by Prof. Hongzhong Yan (Shanghai University of Finance and Economics) with the assistance of George Zhijian Qiao (Stanford University). It is a pleasure to acknowledge their valuable contribution to this project. The dataset is described below.

Our theoretical approach rests on three central ideas. First, social organizations are important because they constitute basic units of cooperation. Second, social organizations are also held together by mutual moral obligations and group-specific morality, not just by economic interests or other common attributes. Third, although very persistent, the forces that glue individuals to a group are not immutable. Individuals tend to vote with their feet and join or abandon a group, and the institutional and cultural foundations of social groups evolve endogenously over time. These central ideas can be used to explore a variety of settings, and not just the institutional development of China and Europe.

The distinguishing and novel feature of the theory is to jointly study group formation and group identity. Individuals with given preferences choose which group to join. But individual preferences (group identity) evolve over time, reflecting group membership. Thus, in equilibrium the partition of individuals amongst groups and their group identity are jointly determined. Here groups refer to social organizations, but similar forces may be at work in other settings.

Specifically, we formulate a simple model in which individuals with given but different cultural traits choose their social affiliation, to their clan or to a city (the foremost corporation). Both organizations supply public goods, but they rely on different enforcement methods.<sup>3</sup> The equilibrium size of these organizations reflects the diffusion of cultural traits, since different traits (loyalty to kin versus generalized morality) confer a comparative advantage to one or the other organization. We then study the dynamic evolution of culture and organizations. Overtime the distribution of cultural traits across individuals reflects their social affiliation: we assume that the children of individuals affiliated with clans are more likely to be loyal to their clan and to its collective identity, while individuals born in a city tend to share notions of generalized morality and universal respect for individuals who are not their kin. These dynamic complementarities imply multiple steady states that can only be reached from different initial conditions. Two otherwise identical societies that differ only in the initial distributions of moral traits could evolve along different self-reinforcing trajectories of value systems, organizational forms, and enforcement institutions. Initial diffusion of kin-based morality leads to a steady state where clan loyalty and collectivism is widespread, the clan provides public goods, the share of the population organized in a corporation is small, and intra-organization institutions are weak. Conversely, if generalized morality and individualism are initially widespread, the organization of society moves to an opposite steady state, where independent cities (or other corporations) are the main providers of public goods.

Succinctly, when applied to explain China vs. Europe, the model thus predicts the following differences in social organizations and value systems:

<sup>1</sup> This definition is much broader than that common in the literature on China (see below). Clans in this literature are restricted to take the form common in the South of China where clans are rural, reside in uni-clan villages and holding property in common. The analysis here focuses on clans as kin-based social unit of cooperation regardless of its place of residence, property, or location.

<sup>2</sup> We avoid using the terms formal and informal here because these terms are subjective and often anachronistic. By personal enforcement we mean enforcement based on leveraging the overlapping layers of social, economic, cultural, and coercive relations among specific individuals. Impersonal enforcement, in contrast, is based on motivating compliance regardless of lack of personal relationship among the individuals involved. The Western legal system is one manifestation of effective impersonal enforcement. See discussion in Dixit (2004) and Greif (2006a).

<sup>3</sup> We generically use the term “enforcement” to refer to the social means used to induce behavior (e.g., legal punishments, social pressure, economic sanctions, etc. We differentiate among these means below as required. See discussion in Greif (2006a, chapter 2)).

	China	Europe
<i>Social Organization</i>	Clan	Corporation
<i>Membership rule</i>	Common kin	Common interest
<i>Value System</i>	Kin based and collectivist	Generalized and individualistic
<i>Enforcement</i>	Kin morality and personal	Generalized morality and impersonal
<i>Comparative advantage</i>	Low intra-group enforcement cost	Scalability - EoS in enforcement

We then compare the evolution of social organizations in China and Europe in light of these predictions. The historical analysis reveals that clans and corporations began to proliferate by the end of the first millennium, particularly when and where the state was weak or absent. With little support from state, alternative mechanisms were required to fulfill the need for public good provision. The need for public goods was particularly acute in areas of intense migration; the process by which new settlers chose their social affiliations and built social organizations resembles the bottom-up process captured by the model, and was not determined by political interferences or other institutions.

To identify cultural traits, we rely on three sets of historical indicators: religion, legal codes, and charity organizations. Religious beliefs around the 9th century differed sharply in the two societies, and they implied different notions of morality: primarily directed towards kin in China, more impersonal and directed towards all individuals in general in Europe. This created different loyalty groups with which individuals identified, and conferred a comparative advantage in enforcing cooperation to distinct social organizations. The moral code associated with the clan facilitated kin-based cooperation. The European corporation, in contrast, was built on impersonal rules consistent with generalized morality and respect for the individual, and more appropriate to enforce cooperation between unrelated individuals. The analysis of legal codes and charities provides additional evidence of these differences, and confirms that the cultural divergence between China and Europe became more pronounced over time. In China, the predominant role of clans and of kin-based interactions reinforced moral obligations towards kin. In Europe, the proliferation of open and heterogeneous communities such as independent cities strengthened notions of generalized morality and the rule of law.

The evolution of other market and state institutions, and their interaction with clans and corporations, further reinforced this divergence. In both regions, the state relied on the predominant social organization to delegate administrative and economic tasks. The Chinese state retreated from the countryside and increasingly focused on providing global public goods. The system was effective in supporting an expanding population, industry and trade, as well as a large army and territorial expansion. The dichotomy between clans and state administration remained a weak point of Chinese institutional evolution, however. In Europe, by contrast, the integration of corporations into the state administration was facilitated by a tradition in which individuals unrelated by blood cooperated based on generalized morality and legal enforcement. We leave to a follow-up project exploring these institutional evolutions and how they subsequent economic and political outcomes. Yet, the preliminary evidence in this paper suggests that the distinct social organizations that prevailed in China and Europe had lasting effects on the pattern of their economic and political development.

Finally, and motivated by this conclusion, we provide quantitative evidence that cultural differences between China and Europe persist today, and that in China kinship based organizations have survived the shock of the communist revolution and its ideology of class-based morality. In 1949 the clans were officially disbanded, their property taken, their rules invalidated, and clan genealogies were burned for heating. Yet, clans reemerged in China after 1979, and they probably contributed to the success of the pro-market reforms supplementing the weak legal institutions.

This paper builds on a recent but rapidly growing literature on the joint analysis of culture and institutions (see Greif, 1994, 2006a; Tabellini, 2008a,b; Nunn, 2012 provides a recent survey). To that literature, we add a focus on endogenous social organizations and a comparative historical analysis of China and Europe. Greif (2006a), de Moor (2008) and Kumar and Matusaka (2009) pursue a similar approach, but the latter also emphasized population density as a key factor that can explain cultural and institutional divergence between Asia and Europe. Our distinction of limited vs. generalized morality, applied to the value systems in China and Europe respectively, is closely related to the distinction between collectivist vs. individualist values emphasized by Gorodnichenko and Roland (2011, 2016) among others.

There is a long-standing debate on the distinct development trajectories in the West and China. Recent contributions include Pomeranz (2000); Brenner and Isett (2002), Voigtländer and Voth (2013); Sng (2011), and Rosenthal and Wong (2011). See also the reviews by Deng (2000) and Brandt et al. (2011–2013). Much of this debate has focused on external environmental factors or the role of the state, however, neglecting the social organizations which are the focus of this paper. A small and growing literature on the comparative economic history of social organizations focuses, in particular on the corporation (e.g., Greif, 1994, 2005, 2006b; Kuran, 2005; Guinnane et al., 2007 and de Moor, 2008).

Karl Marx was perhaps the first to view social organizations as means of control. According to this interpretation, the distinction among social organizations in China and Europe is inconsequential because they serve the same function. Those who control the means of production create social organizations to perpetuate their control. The Chinese and European elites relied on the clan and the corporations to maintain their power. The Chinese kinship groups, for example, fostered elite control by holding the kinship group liable for actions of their members.<sup>4</sup> Similarly, the European elite strategically

<sup>4</sup> For a recent articulation on this perspective, see Acemoglu and Robinson (2012). For a review and discussion of the case of China see Szonyi (2002, pp. 57–68).

created corporations to align interests, influence wealth distribution, and maintain political order.<sup>5</sup> These are important insights and we return to them below. Yet, the elite-control argument neither explains the timing of these organizations' emergence nor the forms they took. Moreover, the evidence contradicts the view that the clans and corporations were passive subservient to whim of elite. In fact, clans in China and cities in Europe often opposed the state and its officials. Furthermore, self-governed European cities and Chinese clans were important agents of economic and political changes that adversely influenced dominant elites.

Weber (1968) advanced the conjecture that cultural distinctions lead to different social organizations: Chinese culture emphasized kinship, while European culture emphasized individualism. Although this conjecture is appealing and our paper builds on it, it is also historically and conceptually unsatisfactory. Historically, the cultural distinctions prevailed long before the emergence of clans and corporations in China and Europe. Why did its manifestations emerge when they did? Moreover, culture is endogenous and slowly adapts to prevailing social conditions. Any cultural explanation is incomplete without an analysis of why it persists, despite cultural entrepreneurs and deviants who challenge the dominating culture and provide alternatives, as was the case in China and Europe.

Although the above two views are considered mutually exclusive, our analysis combines some of their core insights. Organizations can influence outcomes only to the extent that they influence behavior beyond what is achievable by each individual member acting separately. Their members should be motivated to take actions that otherwise they would not undertake. The Chinese elite could use kinship groups to foster control only because kinship mattered. The European corporation could aggregate more heterogeneous groups because there was a cultural predisposition of loyalty also towards unrelated individuals. Culture influences what is socially acceptable and institutionally feasible. At the same time, the form of social organizations preserves and reinforces specific cultural traits. Social organizations and culture are mutually constitutive (Greif, 1994). In other words, complementarities among cultural, social, and institutional features imply mutually reinforcing effects.

The outline of the paper is as follows. Section 2 describes the pattern of cooperation in pre-modern China and Europe, illustrating the central role of the clan and corporation respectively. Section 3 presents and solves our theoretical model, first in a static version with given cultural traits, and then in a dynamic version where culture adapts to the social organizations. Section 4 contains our historical analysis: first it describes the timing and circumstances that led to the emergence of clans and corporations; then it documents the initial conditions and subsequent evolution of cultural traits; and finally it describes the interactions with market and state institutions. Section 5 documents the re-emergence of clans and the cultural persistence in modern China. Section 6 concludes.

## 2. Cooperation in pre-modern China and Europe

This preliminary section substantiates that the social organization of cooperation differed in China and Europe on the eve of the modern period. In pre-modern China *clans* were paramount social organizations, while in Europe *corporations* were common. In addition, the section presents evidence regarding clans' economic roles and that their perpetuation did not depend on their role in maintaining social order in the Late Imperial period. The eminent Chinese historian, Hsien-Chin Hu has argued that the clans were based on the "idea of self-government and mutual reliance for the benefit of the group" (1948, p. 13).

The clan is a social organization that includes (some or all of) the patrilineal households that trace their origin to a (self-proclaimed) common male ancestor.<sup>6</sup> In contrast, the corporation is a social organization established by individuals to pursue common interests regardless of kinship. Membership in a clan is based on kinship while membership in a corporation is based on common interest. In other words, clan members share interest because of their membership, while corporations include members sharing a common interest regardless of kinship.

Both the clan and the corporation are inter-household social organizations whose perpetuation doesn't depend on the participation of any particular individual.<sup>7</sup> As such they can fulfill similar roles in supporting inter-household and inter-generational cooperation. But their different membership rules complement different methods of motivating cooperation: reciprocal moral obligations among kin and personal, multi-dimensional intra-group repeated interactions, in the clan; through generalized – and thus weaker – moral obligations supplemented by impersonal enforcement procedures, in the corporation.

It should be emphasized, however, that there were social organizations that included non-kin in China, and Europe had kin-based social organizations. Yet, their relative importance was vastly different, and the evidence leaves little doubt that the clan and the corporation were the quintessential social organizations in China and Europe to the modern period. In presenting the evidence more attention is given to the Chinese case which is less familiar to non-specialists.

<sup>5</sup> See, for example, North et al. (2009) and Jha (2015).

<sup>6</sup> For a discussion of the various organizations in this category see Ebrey and Watson (1986), introduction; Watson 1982; and the discussion below. Inter-societal comparison requires, as noted above, broader definition of clan than common in the literature. Similarly, the definition of corporation is broader than common and corresponds to its pre-modern use and conceptualization. See Greif (2006a,b).

<sup>7</sup> A "household" in China included the parents, their unmarried children, any relative in residence, married sons (whether in residence or not), and these sons' family members. In Europe, a household includes the nuclear family and any adult child or other relative in residence.

## 2.1. Clans, corporations, and cooperation

Clans in 19th century China were so common that Westerners considered them the hallmark of Chinese culture. A widely circulated English book about China in 1869 asserted that the “Chinese nation is divided into” clans and members of “these clans are bound to assist each other in any way that may be required”.<sup>8</sup> Although Chinese social history was more complex, kin-based organizations were central to its social organization of cooperation. Clans, for example, relieved the poor, the elders and the orphans, lent money to members in need, educated the young, conducted religious services, built bridges, constructed dams, reclaimed land, protected property rights, and administered justice.<sup>9</sup>

There are many pieces of evidence that clans were economically important in some time and place. It is known, for example, that clans in Northern China had little commonly held land, while in the South some clans had very large land holdings. In the early 20th century, clan trusts owned about 33% of the cultivated land in Guangdong during the interwar period (Pang 1981, p. 40), and about 44% of the cultivated land in the Pearl River delta (Mok, 1995, p. 29). Similarly, although clans were numerous, the population share of clan members by periods and places is unknown. Some but not all historical clans were very large as was the case in Liaoning province (1789–1909) for which the data is particularly good. In Liaoning, the five largest clans (Zu) together had 75% of the population in 1789 and 70% in 1909. Yet, 79% of the clans had no more than 46 individuals.<sup>10</sup>

The lack of comprehensive historical data reinforced the tendency, noted above, to view Chinese clans as a backward form of economic organization that emerged and perpetuated due to its role in maintaining social and political order in late Imperial China. If correct, clans should have been common in the less economically advanced areas of China and they should have declined after 1912 when the Republic overtook the Empire. The decline should have begun even earlier because the Imperial authorities had already turned against the clans. The opposite should have been the case if, as conjectured here, clans were an integral part of the social organization of cooperation. In this case, clans should have been more common in the advanced areas of China and clans were likely to become more important and common as the Empire disintegrated.

To evaluate the above predictions our analysis relies on a database created from the recently published printed registry of all known clan genealogies (Wang 2008). An entry in the registry reports an update of a clan’s genealogy. Such updates were performed to keep a clan’s records current and then the updated genealogy was published. Each entry therefore contains both update-specific and clan-specific variables. The former variables uniquely characterize the update by specifying, for example, when and where it was made while the latter characterize the clan by naming the individual the clan traced its origin to, when and where he had lived, etc. The genealogy database contains about 51,200 observations regarding 38,429 clans. Most updates (98.6%) were made between 1644, when the Qing Dynasty came to power and 2005, the last year of data collection. The value of genealogies for historical analysis depends on the issue and is discussed accordingly below. General discussions of genealogies as a historical source can be found in Liu (1959), Telford (1986) and Shiue (2017).

To evaluate the nature and role of clans, the 25,923 observations from the Ming, Qing and the Republican periods (1368 to 1949). The data is aggregated into two groups: the six economically advanced provinces of the low and middle Yangtze river (henceforth Y), and the rest of China’s core 16 provinces (henceforth R).<sup>11</sup> This data directly provides the most comprehensive measure regarding the number of clans. It also provides a spatial and territorial measure for clan-held common property and thus a measure of clans’ role in supporting economic cooperation. To the best of our knowledge, this is the first comprehensive measure of an economic role fulfilled by clans.

Calculating the probability that a clan held common property builds on Liu (1959) seminal study of 316 rule books produced by 151 clans. Each rule book specified a clan-specified code of conduct that members were to follow. Liu observed that the title of a rule book revealed if the clan held common property. In his words, “when the [clan rule] titles contain the word [so and so] ... the [clan] rules have the provisions on ... common property” (p. 27). In particular, the conditional probability that a clan held property is one third if the clan rule book’s title contained the terms *tsung* or *tzu* (clan group). Because clan rules were incorporated in genealogies, it is possible to also examine the relations between genealogies’ titles and rule books’ titles. The conclusion is that if the rule book’s title has either the term *tsung* or *tzu*, so does the genealogy’s title. Thus, the probability that a genealogy with either of these terms held common property is .333. It is thereby possible to calculate the conditional probability that a genealogy written at a particular time and place held common property.<sup>12</sup>

<sup>8</sup> Reynold’s (1869), 42, p. 157.

<sup>9</sup> Hu (1948) is a seminal discussion. For recent surveys and contributions, see Cohen (1990); Szonyi (2002), Ahern (1976), and Faure (2007). Ruskola (2000) disputes the distinction between kin-based organizations and (Western) corporations. For context, see Hartwell, 1982. We follow Pasternak (1969) and others in linking clans and migration.

<sup>10</sup> Based on Lee, James Z., and Cameron D. Campbell. China Multi-Generational Panel Dataset, Liaoning (CMGPD-LN), 1749–1909. ICPSR27063-v10. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2014-07-10. <http://doi.org/10.3886/ICPSR27063.v10>.

<sup>11</sup> Provinces in current (2005) boundaries. Yangtze: Anhui, Zhejiang, Jiangsu; Middle Yangtze: Hunan, Hubei, and Jiangxi. The rest: Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Shaanxi, Shandong, Shanxi, Sichuan.

<sup>12</sup> This procedure is tentative and still to be refined. Only 67 out of the 151 genealogies in Liu’s data had the above terms. Moreover, the procedure assumes that titular terms had the same meanings over time and space. In other words, it assumes that the (probabilistic) relations between titular terms and common property were constant over time and uniform over space. This, most likely, was not the case and several studies noted inconsistencies and change in titular terms. Yet, our analysis is based on the average use of 316 rule books from different time periods (unreported in Liu, 1959). Moreover, more than 90% of the genealogies in Liu’s analysis are from the 6 provinces in the lower and middle Yangtze River. We therefore considered the provinces in that region separately from the other core provinces. The reliability of the former is higher but we report the findings for all core provinces.

	Genealogies		Adjusted: pop & years		Ratio	Prob. Property	
	Y	R	Y	R	Y/R	Y	R
<b>Ming</b>	417	68	2	0.3	6.1	0.21	0.21
<b>Qing</b>	10455	2271	10.2	1.6	6.4	0.27	0.21
<b>Republic</b>	7306	1844	46.6	6	7.7	0.28	0.22
<b>Total</b>	18178	4183				0.27	0.216

The genealogy database w/o repetitions. Yangtze (Y): Anhui, Zhejiang, Jiangsu, Hunan, Hubei, Jiangxi (2005 provincial boundaries). Rest (R): rest of 16 coner provinces. Population data from Chao (1986) and Chen (1923).

**Fig. 1.** Clans and common property in China 1368 - 1949.

Fig. 1 presents the data. Columns 1–2 show that the number of genealogies increased over time in both the Yangtze region (Y) and the rest of China (R). This is also the case even after adjusting the raw data to population size and regimes' length (columns 3–4). Genealogies were not associated with economic awkwardness.<sup>13</sup> In fact, the (adjusted) number of genealogies is higher and increasing faster in the economically advanced Yangtze region than the rest of China (column 5). Moreover, in both regions, the demise of the Empire was followed by a substantial increase in the number of genealogies updated (columns 3–4).

The last two columns in Fig. 1 display the per-dynasty probability that a clan held common property in each regions. The percentage of clans that held common property ranged from 21% to 28%. The weighted average was 27% and 21.6% in the Yangtze region and in the rest of China respectively. These figures seem reasonable. Liu (1959), who directly examined the content of the book rules, found that 21% of the clans held common property (p. 29). Applying the same procedure to other regional divisions of China reveals that the Northern provinces had the lowest probability of common property (11% in the Northeast to 16% in the North), the East had the highest (24.4%) followed closely by the Southcenter (23.7%). The finding that clans held common property is consistent with other evidence such as the common ownership of ancestral halls and clan trusts.

The above analysis is preliminary and should be further evaluated and adjusted. The analysis of property holding, in particular, requires refinement based on additional data.<sup>14</sup> Yet, the evidence is clear and the data reveals the extent of their economic function and their independence from the state. Clans were more common in the economically advanced Yangtze region and more updates were made as China was growing economically. This is not due to selection bias. Although richer clans had the means to update their genealogies, updating should have reduced their evolutionary fitness unless clans fostered cooperation. Similarly, the data does not support the view that the perpetuation of Chinese clans depended on political support. On the contrary. The (adjusted) number of genealogies updated after 1912 increased by more than four times in both regions. Clearly, newly printed genealogies might have been better preserved, but if clans perpetuated because of state patronage, why updating at all once the gravy train had departed. From the late Qing, the authorities have become increasingly hostile toward clans. In short, the data supports that the Chinese clans were an integral component of the social organization of cooperation.

In contrast to the rise of clans in China, European large kinship groups such as the Celtic clans or the Germanic tribes became either extinct or confined to limited areas. Gradually, corporations became specialized social organization that sustained cooperation. Cities provided legal enforcement, schooling, commercial infrastructure, and other local public goods (e.g., Pirenne, 1969). Monasteries provided poor relief, universities educated, and guilds regulated production. In fact, corporations became the standard way for achieving collective goals. Consider, for example, the Crusades. A large scale cooperation was achieved via corporations such as the Order of the Knights Templar (Barber, 1995) and the Knights Hospitaler (that ruled the islands of Rhodes and Malta) and the Teutonic Order (that spearheaded the Crusaders in Eastern Europe).

To illustrate the divergence between China and Europe, consider the social organizations that held common property for the purpose of mutual insurance. In China, since the Song dynasty such property was held in clan trusts. European kinship groups sometimes established trust holding their common property, and family members supported each other (e.g., King, 2000). Yet, the main social organization for mutual insurance in Europe were religious and secular corporations. In 19th century England, for example, common property for mutual insurance was held by the corporations known as Friendly Societies.<sup>15</sup> These were voluntary associations whose members contractually pledged to regularly pay a premium in return for insurance. Kinship played no institutionalized role in membership selection. Yet, as early as 1801, about 32% of English families had a member in a friendly society (Marshall, 1833, p. 33). This is about 64% of the working class families that need insurance (that is, excluding the wealthy who could self-insure and the poor who could not afford the premium).

<sup>13</sup> Adjustment to number of generations (30 years each) and population as available closer to mid period. Population from Chao (1986) and Chen (1923).

<sup>14</sup> See footnote 12.

<sup>15</sup> Greif and Iygun (2013). For another examples, see, for example, Van Leeuwen (2012) concerning the Netherlands.

Membership as a share of households increased to 39% by 1815 (Powell, 1827, p. 12, 25) and to 50% by 1904 (Cordery, 2003, p. 1).

## 2.2. Enforcement of cooperation

Motivation to cooperate can be sustained in multiple ways (as was already noted in footnote 2) and in the case of the clan and the corporation, their distinct membership criteria corresponded to distinct enforcement mechanisms.

In China, although clans had legal authority over their members, clan rules rarely specified punishments for transgression but relied on moral and social sanctions and rewards. As one clan book rule states, “a clan without rules leaves its members with no moral standard of conduct to follow” (Liu, 1959, p. 22). These were not empty words as no punishment was specified for most transgressions.<sup>16</sup> The resulting frequent interactions among kin-related individuals, seems to have facilitated the operation of reputation mechanisms that further reduced the temptation to cheat or free ride on other clan members. One implication is a lower potential gains from creating.<sup>17</sup>

In contrast, rules governing the relations among members of corporations generally relied on generic legal procedures and coercive measures, reflecting the weaker moral obligations within a group collected on the basis of common interest. Such formalities are most transparent in the late Medieval European cities that developed legal codes to enforce cooperation. The late medieval urban communes progressed from legal customs to legal codes, and from elected voluntary judges to professional ones (e.g. Clark, 1987). Self-governed cities adopted and enforced codes of law and between 1143 and 1475, in Germany alone, for example, 190 cities adopted one of the twenty different law codes that had been specified by the leading towns.

Differences in enforcement methods between clans and corporations (particularly cities) are also evident from their sources of revenues. While taxes and monopolies were important sources of revenues in European cities, Chinese clans financed similar public goods by relying on voluntary contributions and donations by members. The Chinese clan trust, mentioned above, was first introduced during the Song Dynasty (960–1279) and it enabled clan members to jointly hold property. Trusts were endowed by wealthy clan members and some clans, particularly in the south, were very wealthy. In the north, lineage organizations had little, if any, property and their operation was financed by on-going contributions. In multi-clan villages the local temple collected contributions and assisted members of the local clans (Huang, 1985). In Europe, charity organizations relied on voluntary donations but not the municipal authorities *per-se*.

Summarizing, pre-modern Europe and China relied on very different social organizations to enforce cooperation in a variety of settings. The next section presents a model that explains how these patterns could have evolved out of different initial conditions, and explores the mutual reinforcement of culture and social organizations.

## 3. A model of cultural and institutional bifurcation

How can we explain the emergence and diffusion of such different social organizations? And what do these social structures imply for the pattern of social and economic interactions? Is it possible that temporary changes in the economic, cultural, or social underpinnings of the clan and the city have had a permanent impact by leading to distinct trajectories of cultural, social, and institutional evolution.

This section studies a simple theoretical model that attempts to answer these questions.

Our starting point is the idea that the different membership rules for clans and corporations have key implications for how cooperation is enforced within the group. A kinship based organization can rely on enforcement methods that take advantage of its members' strong reciprocal moral obligations. Members of a common interest organization, instead, have weaker and impersonal moral obligations; as such, the organization has to rely on more formal and expensive enforcement procedures.

We embed this idea in a model in which membership to a clan or a corporation is freely chosen by individuals, based on convenience and the intensity of their moral obligations. Individuals with given but heterogeneous morality choose to interact with their kin (forming a clan), or with non-kin (giving rise to a corporation). The role of the clan and the corporation is to sustain cooperation in the provision of a local public good to their members (club goods). A larger organization is more attractive, because of economies of scale in public good provision, inducing a strategic complementarity. The main result of this bottom-up process is that the equilibrium size of each organization depends on the initial distribution of values in society. The clan emerges as a dominant social organization if a large fraction of the population has strong moral ties to their kin, while the corporation is favored if moral ties are impersonal albeit, weaker.

We then allow the distribution of individual moral traits to be shaped by the pattern of social interactions. Clan based interactions foster loyalty to the kin, while interactions within a common interest organization spread generalized morality. This gives rise to a joint dynamics of organizations and values, that can explain the institutional and cultural bifurcation between China and Europe.

<sup>16</sup> Liu's (1959) classical study of the rules of 151 clans reveals that punishment was specified with respect to only 20% of the rules. See also Ma (2007) and Ahern.

<sup>17</sup> See review in Ma (2007). Cf. Zelin et al. (2004).

The model refers to the alternative organizational structures as the city and the clan, because the former epitomizes the European corporations, while the latter is the main Chinese kinship-based social organization. The city is also the historically most important and comprehensive common interest organization. As explained in the next section, this interpretation is consistent with the main historical phenomenon we want to capture: these different organizations emerged during a period of intense migration, where settlers were choosing whether to settle in a city or to mainly interact with a clan. This is only one of the possible interpretations, however. The term city does not necessarily refer to a group of individuals living in an urban settlement, but to any social organization in which individuals unrelated by kinship interact on a regular basis and have the capacity to organize themselves institutionally. Similarly, a clan does not necessarily refer to its Chinese rural historical form, but to any organization whose members are related by some innate attributes, such as kinship, childhood friendships, or common origin. In short, we use the terms city and clan to capture distinctions in social organizations, and not distinction between rural and urban settlement.

### 3.1. Static analysis

#### 3.1.1. The model

A population of fixed size  $M$  is split in  $M > 1$  identical dynasties (or families). Each dynasty contains a continuum of individuals and the size of each dynasty is normalized to unity. Individuals live one period. At the beginning of their life, they choose whether to settle in the city or in their clan. These are mutually exclusive alternatives, thus settling in the city implies abandoning the clan. This settlement decision is meant to capture the choice of the primary social organization to which the individual contributes, and from which it enjoys the provision of local public goods. For brevity in what follows we refer to this decision as “joining” the clan or the city, although more precisely this means remaining in the clan, or abandoning it in favor of the city. As explained in the next section, these social organizations spread and consolidated at times of extensive migration, when different kinds of communities formed to provide local public goods to new settlers.

There is a single city that can draw settlers from all dynasties, while the clan can only draw individuals belonging to a single dynasty; thus, there are several clans and one city. Settling in the city (rather than in the clan) gives to each individual an idiosyncratic extra benefit  $\delta$ , where  $\delta$  is a random variable distributed within each dynasty according to a uniform distribution over the range  $[0, 1/d]$ , with  $d > 0$ . Thus, as the parameter  $d$  drops, the city becomes more attractive to more individuals (both the mean and the variance of the distribution of  $\delta$  increase).

Each individual has a fixed endowment equal to 1. After having chosen his location (the city or the clan), he decides whether or not to contribute a fixed amount  $\tau$  to the community where he settled, with  $0 < \tau < 1$ . Individuals draw utility from two sources (besides the random variable  $\delta$  defined above). First, they enjoy a material benefit:

$$v = 1 - t + H(g)$$

where  $1 - t$  refers to private consumption, with  $t = \tau, 0$  depending on the individual choice, and  $g$  denotes a public good supplied by the community of residence (the city or the clan). The function  $H(\cdot)$  is continuously differentiable, concave, and strictly increasing, with  $H(0) = 0$  and  $H_g(\tau M) > 1/M$  (this last condition implies that the public good is sufficiently productive from a social point of view).

Second, each individual also enjoys a psychological benefit  $p$  whenever it contributes a positive amount to the community with which it identifies.<sup>18</sup> Irrespective of where they choose to settle, individuals can identify with either their clan or with the city. In each dynasty there is a given fraction of individuals who identify only with the clan, and the remaining fraction identifies with the community where they choose to settle, irrespective of whether it is their clan or the city. For shortness, we call them the “clannish type” and the “citizen type” respectively. The psychological benefit of giving to the community with which individuals identify differs by type; specifically, we assume that  $p = \lambda$  for a clannish type and  $p = \gamma$  for a citizen, with  $\lambda > \tau > \gamma > 0$ . Thus, identification with the clan is stronger for the clannish type than for the citizen, in the sense that the former draws a more intense psychological reward from participating in the provision of the clan public good. The citizen on the other hand draws the same psychological benefit from contributing to the city or to the clan, but it is a weaker benefit. By assumption, the intrinsic motivation of the clannish type is so strong that they are willing to contribute to their clan (but not to the city) even without any external enforcement ( $\lambda > \tau$ ), while a citizen would choose not to contribute (neither to the clan nor the city) in the absence of enforcement ( $\tau > \gamma$ ). Note that, unlike a citizen, a clannish only feels obliged to contribute to his clan, even if he decided to join the city. This is meant to capture the distinction between limited and generalized morality (and the related distinction between collectivism vs. individualism): a citizen feels a general obligation to respect the rules of the community that he joined, whatever it is, whereas a clannish type only feels obliged to his kin. Moreover, individuals can only contribute to the community which they joined (and which we metaphorically associated with a place of residence).<sup>19</sup> Finally, individuals choose where to settle, while nature chooses their type. Of course, as described below, identification (or morality) is one determinant of whether individuals choose to settle in the clan or in the city. For simplicity, the distribution of the idiosyncratic parameter  $\delta$  is the same for clannish and citizen types.

<sup>18</sup> An equivalent formulation would have each individual bearing a cost  $p$  whenever it free rides or cheats on the community with which it identifies.

<sup>19</sup> Excluded by assumption is the possibility that one contributes to a faraway community or that a different members of a nuclear family live in different communities. This assumption is made for the ease of exposition.

**Table 1**

Clans and common property in the Yangtze region and the Rest of China (1368–1949).

Type	Location		
	clan	city	total
clannish	$x^{\lambda n}$	$x^{\lambda y}$	$x^{\lambda}$
citizen	$x^{\gamma n}$	$x^{\gamma y}$	$x^{\gamma}$
total	$x^n$	$x^y$	1

A simple enforcement technology is available: by spending an amount  $e \geq \tau$  of public resources, individuals who do not contribute are detected with probability  $q$ . If caught, their endowment is destroyed, so that their material utility is just equal to  $H(g)$  (thus even if caught an individual continues to enjoy the benefits of the public good, or equivalently the public good is non-excludable). The assumption  $e \geq \tau$  implies that it would never be optimal to exploit this enforcement technology in the clan, because it is too small. If external enforcement is used, it would only be in the city. Moreover, as emphasized below (Eq. (2)), a city is viable only above a minimum size. This is meant to capture the idea that there are important economies of scale in setting up formal enforcement institutions. In this regard, we also assume that:

$$\tau > q \geq \tau - \gamma$$

This implies that, if enforcement is used in the city, it is powerful enough to induce contributions by the citizens, but not by the clannish type. We assume that, whenever it is optimal to do so, the city exploits this enforcement technology. Table 1 introduces the notation that will be used below, where each cell refers to a combination of preferences and location, where the  $\lambda$  and  $\gamma$  superscripts denote preferences, while the  $n$  (for clan) and  $y$  (for city) superscripts refer to location.

Thus,  $x^{\lambda n}$  is the fraction of individuals who are of type  $\lambda$  (clannish) and settle in the clan,  $x^{\lambda y}$  the fraction who is of type  $\lambda$  and lives in the city, and so on. The variables  $x^p = x^{pn} + x^{py}$ , for  $p = \lambda, \gamma$ , denote the proportion of type  $p$  in each dynasty and are chosen by nature. Similarly,  $x^y = x^{\lambda y} + x^{\gamma y} = 1 - x^n$  denotes the fraction of each dynasty settling in the city, and it is determined in equilibrium, along with the proportions in each cell of Table 1.

With this notation and given the above assumptions, we can pin down the public good provision in the two communities. Given that only the clannish type contributes to the clan, the amount of public good provided in the clan is:

$$g^n = \tau x^{\lambda n} \quad (1)$$

Similarly, given that only the citizens contribute to the city, the amount of public good provided in the city is:

$$g^y = \tau M x^{\gamma y} - e \quad \text{if } x^{\gamma y} > e/M\tau$$

$$g^y = 0 \quad \text{otherwise} \quad (2)$$

where we have used the constraint that the enforcement technology can be used only if the city is large enough and it attracts a large enough fraction of citizen type.

Throughout we assume:

$$1/2 > e/M\tau \equiv \hat{e} \quad (3)$$

This condition enables the existence of equilibria with small city size (i.e. less than half the population lives in the city).

For reasons discussed below, we also assume:

$$\tau M H_g(0) < 1/d < \lambda + \gamma + q - 2\tau \quad (C1)$$

The first inequality says that the distribution of benefits from being the city,  $\delta$ , is sufficiently spread out relative to the marginal benefit of the public good (evaluated at  $g = 0$ ). This assumption is used to prove existence of equilibria in which some individuals are in the clan and others in the city (see Propositions 1 and 2 below). Intuitively, a complementarity is at work: as more citizen types move to the city, the city becomes more attractive, because public good contributions increase (and vice versa if more clannish individuals remain in the clan). This complementarity needs to be offset by sufficient heterogeneity in the distribution of  $\delta$ , otherwise everyone would be attracted to the city (or to the clan) in equilibrium. The second inequality says that the distribution of  $\delta$  should not be too spread out, relative to the overall net benefit of contributing to the public good (the RHS of C1). As discussed below, this assumption is needed to rule out some equilibria. In other words, there must be enough, but not too much, heterogeneity in the benefits of being in the city, as captured by the parameter  $d$ .

The timing of events is as follows: Each individual observes his type and then chooses whether to settle in his clan or in the city. Individuals then observe the community size (and hence whether the enforcement technology is feasible or not) and choose whether or not to contribute to the community budget. Payoffs are realized. An equilibrium is defined as a distribution of individuals across communities and an allocation of resources such that: (i) All individuals have optimally chosen whether to settle in their clan or in the city, given their type and correctly anticipating all subsequent events. (ii) All individuals have optimally chosen whether or not to contribute to the community budget, given their type, their community size, and the distribution of types in the clans and in the city. We only consider symmetric equilibria where all clans have the same size and the same distribution of types.

### 3.1.2. Equilibrium city size

We now discuss how different types are distributed amongst the city or the clans. In general, many equilibria are possible, depending on parameter values, and multiple equilibria can also occur. In particular, we cannot rule out equilibria in which the whole population settles in the same community (city or clans). The reason is that there are economies of scale in public good provision. Thus, if I expect everyone else to settle in the city (or in the clan), then it is also optimal for me to do so.

In this subsection we characterize the possible equilibria, paying particular attention to equilibria where city and clans coexist. As before, let  $p = \lambda, \gamma$  denote the preference type, namely clannish ( $\lambda$ ) or citizen ( $\gamma$ ). Expected equilibrium welfare of type  $p$  in the clan or in the city is a known function of the composition of the population settling in that community. Let  $\delta^p$  denote the value of  $\delta$  that leaves type  $p$  indifferent between the clan and the city, for  $p = \lambda, \gamma$ . Using the notation in Table 1 above, the fraction of individuals of each type  $p = \lambda, \gamma$  that prefer to be in the city or clan respectively is:

$$x^{pn} = \Pr(\delta \leq \delta^p)x^p \quad (4)$$

$$x^{py} = \Pr(\delta > \delta^p)x^p = 1 - x^{pn} \quad (5)$$

The appendix proves:

**Lemma 1.**  $\delta^\lambda = \delta^\gamma + a$ , where  $a \equiv \lambda + \gamma + q - 2\tau > 0$

The last inequality follows from previous assumptions about parameter values. It implies that the attractiveness of the clan compared to the city is always higher for the clannish type than for the citizens, given that they have the same realization of  $\delta$ , for all possible distribution of players across communities. This result is important, because it has implications about the relative distribution of types across communities in equilibrium. The condition  $\lambda > \tau$  that gives rise to  $a > 0$  means that the amount to be contributed is small relative to the intrinsic reward from not cheating in the clan. This implies that the temptation to free ride is not so strong that the clannish types are easily attracted to the city where they can free ride on the citizens.

Given the assumption that  $\delta$  is uniformly distributed over  $[0, 1/d]$ , there are five possible kinds of equilibria, and some of them exist under the same configuration of parameter values (i.e. we cannot rule out multiple equilibria). In each equilibrium, city size (and hence clan size) is given by a different expression (see the appendix for more details).

(i) First, as already stated, we could have an equilibrium in which everyone joins their clan. By Lemma 1 this requires  $\delta^\gamma \geq 1/d$ . Here city size is 0.

(ii) Second, we could have the opposite situation, where everyone is in the city. By Lemma 1, this requires  $\delta^\lambda \leq 0$ . Here city size is the full population.

(iii) Third, we could have an equilibrium with full sorting, where all the clannish agents are in the clan, while all the citizens are in the city. This requires  $\delta^\lambda \geq 1/d$  and  $\delta^\gamma \leq 0$ . This too could be an equilibrium, for instance if  $\lambda$  is large enough and  $1/d$  is small enough. Here city size coincides with the citizens' population.

(iv) Fourth, we could have an equilibrium with segregation, where all the clannish types are segregated in the clan while the citizens join both communities. This requires  $\delta^\lambda \geq 1/d$  and  $1/d > \delta^\gamma \geq 0$ . Here, city size is  $Mx^{\lambda\gamma}$  (the fraction of citizens settling in the city), which is pinned down by the citizen types' indifference condition.

(v) Fifth, we could have the opposite equilibrium with segregation, namely the citizens are segregated in the city, while the clannish types join both locations. This requires  $0 < \delta^\lambda < 1/d$  and  $\delta^\gamma \leq 0$ . Here, city size is proportional to  $x^\gamma + x^{\lambda\gamma}$ , and  $x^{\lambda\gamma}$  is pinned down by the clannish type' indifference condition.

Note that Lemma 1 rules out an equilibrium with full sorting where all the clannish types prefer to be in the city, while the citizens all prefer to be in the clan (i.e. the opposite of equilibrium (iii)). Moreover, Lemma 1 plus the second inequality in (C1) rule out the equilibrium in which both types are present in both the clan and the city.<sup>20</sup>

These admissible equilibria can be interpreted as reflecting a historical transition that accompanies the growth in the size of cities in Europe, as they became more attractive over time. One can think of an early situation where everyone lived in a clan-based society (equilibrium (i)). Then, for a variety of exogenous reasons (trade opportunities or defense) the city becomes more appealing (the distribution of the random variable  $\delta$  shifts to the right), and some - but not all - citizen types are attracted to the city, so that we move to equilibrium (iv). As the city becomes even more attractive (as the distribution of  $\delta$  keeps moving right), all the citizen types move to the city, and we shift to the equilibrium with full sorting (equilibrium (iii)). If the attractiveness of the city rises further, eventually the city becomes appealing even for the clannish types, and we shift to equilibrium (v), until the last step where all the clannish types have moved to the city and we are in equilibrium (ii). The attractiveness of the city (relative to the clan) can also be deliberately affected by higher order organizations, such as the state. In Section 4.3.2, we discuss several feedback mechanisms, that created incentives for the state to make the city more attractive in Europe, and the clan more prominent in China. In terms of the model, the parameter  $d$  is shaped by opposite forces in China vs. Europe.

<sup>20</sup> In an equilibrium in which both types are present in both locations we should have  $1/d > \delta^p > 0$ , for  $p = \lambda, \gamma$ . But by Lemma 1 this is impossible if the second inequality in condition (C1) holds.

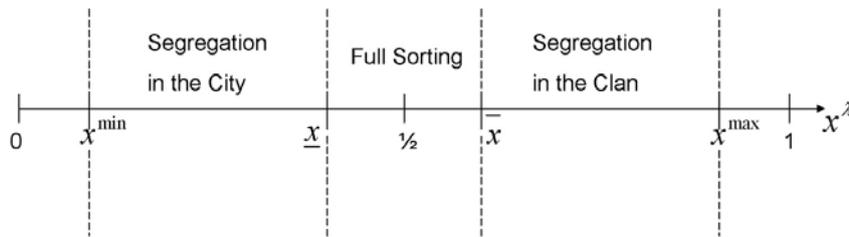


Fig. 2. Static equilibrium configuration.

A drawback of this interpretation, however, is that the theory is silent about equilibrium selection (i.e., we cannot explain how we move from one equilibrium to another). To fill this gap, in the next section we introduce an explicit source of equilibrium dynamics through changing preferences (values). We then study how changing preferences interact with the distribution of individuals across communities, within the same equilibrium.

In preparation for that, here we ask how the existence of the equilibrium and equilibrium city size depend on the type composition of the population (the parameter  $x^\lambda$  in the model). In the first two kinds of equilibria, the answer is immediate. In these two equilibria the whole population is concentrated in a single location (the clan or the city), and thus city size cannot depend on the composition of the population. Moreover, as discussed above, these equilibria always exist for large configurations of parameter values and for any preference composition of the population, as captured by  $x^\lambda$ .

The remaining three equilibria (with full sorting and segregation) only exist for some values of the fraction of the clannish types within each dynasty,  $x^\lambda$ . Each equilibrium exists if and only if  $x^\lambda$  belongs to a specific sub-interval of  $[0, 1]$ . Under conditions stated in the appendix, there are three contiguous and non-overlapping sub-intervals of  $[0, 1]$  such that, as  $x^\lambda$  moves from the lowest to the highest sub-interval, the equilibrium shifts from segregation in the city, to full sorting, to segregation in the clan. More precisely, the appendix proves:

**Proposition 1.** *Under conditions (A1–A4) in the appendix:*

- (i) *The equilibrium with segregation in the city exists if and only if  $x^\lambda \in (x^{\min}, \underline{x})$ , where  $1/2 > \underline{x} > x^{\min} \geq 0$*
- (ii) *The equilibrium with full sorting exists if and only if  $x^\lambda \in [\underline{x}, \bar{x}]$ , where  $1 > \bar{x} > 1/2 > \underline{x} > 0$*
- (iii) *The equilibrium with segregation in the clan exists if and only if  $x^\lambda \in (\bar{x}, x^{\max})$ , where  $1 - \hat{e} > x^{\max} > \bar{x}$ .*

This Proposition is depicted in Fig. 2 and the thresholds of each interval are implicitly defined in the appendix. The appendix also proves that:

**Proposition 2.** *Suppose that the first inequality in condition (C1) holds. Then, in all three equilibria described in Proposition 1, city size is a strictly decreasing function of  $x^\lambda$ , the fraction of clannish types within each dynasty.*

The intuition is simple. Consider first the equilibrium with full sorting. Here the result is immediate: since all the clannish types settle in the clan while all the citizens settle in the city, an increase in  $x^\lambda$  shrinks the fraction of citizens and hence city size shrinks too. Next, consider the equilibria with segregation. As the fraction of clannish types increases, the clan becomes more attractive compared to the city, because the amount of public goods increases in the clan or it shrinks in the city (recall that in equilibrium clannish types contribute to the public good in the clan but not in the city, while the citizens do the opposite). Hence, as  $x^\lambda$  increases, some individuals who were close to indifference move from the city to the clan - which makes the clan even more attractive because it can better exploit the economies of scale in public goods provision compared to the city. The first inequality in condition (C1) is needed to make sure that, as this happens, equilibrium is restored because the distribution of the idiosyncratic preference parameter  $\delta$  is sufficiently spread out. Inequalities (A1–A4) in the Appendix provide sufficient conditions for the thresholds  $x^{\min}$ ,  $\underline{x}$ ,  $\bar{x}$ ,  $x^{\max}$  to be as illustrated in Fig. 2, and thus for an equilibrium with sorting or segregation to exist, depending on the value taken by  $x^\lambda$ . These sufficient conditions put bounds on the net value of being in the city vs. the clan for clannish and citizen types, relative to the range of the distribution of  $\delta$ .

Note that, as we shift from equilibrium (i) in Proposition 1, to equilibrium (ii), to equilibrium (iii), city size increases. Propositions 1 and 2 thus imply that, as the fraction of clannish types in the population increases, equilibrium city size shrinks (and clan size correspondingly increases), either as we shift from one equilibrium to the other, or within the same equilibrium.

### 3.2. Dynamics

The previous subsection pointed out how the distribution of values in the population affects the relative size of the clan vs. the city. In this section we discuss the opposite link: how the distribution of individuals between the clan and the city has implications for the endogenous evolution of values in society. We then discuss the two-way interaction between endogenous values and the relative size of the city vs. clan.

### 3.2.1. The dynamic model

The parameter  $x^\lambda$ , measuring the fraction of clannish types within each dynasty, captures the distribution of values in society. Here we assume that this parameter is not fixed, but varies period after period reflecting the initial distribution of individuals between the clan and the city.

Suppose that the same environment described in the static model reproduces itself in each period with a constant population of one-period lived individuals. We can interpret individuals like households, and assume that each individual (or household) gives birth to a new individual (or household). The preferences ( $\lambda$  vs.  $\gamma$ ) of the newborn individual reflect both the preferences of his parent, as well as the community (clan vs. city) where his parent lived. Specifically, we assume that a clannish parent living in the clan gives birth to a clannish son with probability  $\bar{p} \geq 1/2$ , and to a citizen son with probability  $1 - \bar{p}$ . But a clannish parent living in the city gives rise to a clannish son with probability  $p < \bar{p}$ , and to a citizen son with probability  $1 - p$ . By symmetry, a citizen parent gives birth to a citizen son with probability  $\bar{p}$  if he lives in the city, and with probability  $p$  if he lives in the clan, giving birth to a clannish son with complementary probabilities. These assumptions are meant to capture the idea that values are transmitted both within the family, as well as by the environment where one grows up. Parents are likely to transmit their values to their children, either deliberately or by setting an example - hence the assumption that  $\bar{p} \geq 1/2$ . But at the same time, growing up in the clan is likely to foster loyalty to and identification with the clan, while growing up in the city is likely to foster a more generalized respect for the rule of law, which in our setting is captured by the formulation of citizen preferences - hence the assumption that  $\bar{p} > p$ . We also assume that  $(\bar{p} + p)/2 > 1/2$ , namely on average a clannish parent is still more likely to give rise to a clannish son than to a citizen, irrespective of where he lives. This assumption can be interpreted as saying that the influence of the family is stronger than that of the environment where one grew up. Finally, we assume that the distribution of the idiosyncratic  $\delta$  parameter remains the same within each group of clannish and citizen types, irrespective of the relative size of the two groups.

Under these assumptions, the law of motion of the fraction of clannish types within each dynasty is (period  $t + 1$  refers to the newborn generation, while period  $t$  refers to the parents' generation):

$$x_{t+1}^\lambda = \bar{p}x_t^{\lambda n} + px_t^{\lambda y} + (1 - \bar{p})x_t^{\gamma y} + (1 - p)x_t^{\gamma n} \quad (6)$$

The terms on the right hand side of (6) refer to the fraction of clannish sons born respectively from: clannish parents living in the clan; clannish parents living in the city; citizen parents living in the city; citizen parents living in the clan. Recalling that  $x_t^\lambda = x_t^{\lambda n} + x_t^{\lambda y}$  and that  $x_t^n = x_t^{\lambda n} + x_t^{\gamma n}$ , we can rewrite (6) as:

$$x_{t+1}^\lambda = (1 - \bar{p}) + (\bar{p} + p - 1)x_t^\lambda + (\bar{p} - p)x_t^n \quad (7)$$

We can interpret Eq. (7) as follows: the first term on the right hand side,  $(1 - \bar{p})$ , is the birth rate of clannish types that would occur if the previous generation only consisted of citizens living in the city. The second term is the differential birth rate between clannish and citizen parents,  $(\bar{p} + p - 1)$ , times the fraction of clannish parents. And the third term,  $(\bar{p} - p)$ , is the differential birth rate between parents living in the clan and the city, times the fraction of parents living in the clan.

Eq. (7) can be combined with the results in the previous subsection to obtain a full dynamic analysis. In equilibrium, the composition of types within each dynasty is jointly determined with the allocation of individuals between the clan and the city. Since different equilibria are possible in the static part of the model, we have to consider each of them in turn. We neglect the trivial equilibria in which all the population is in a single location (city or clan), focusing instead on three static equilibria: the one with full sorting of types across communities, and the two equilibria with segregation of one type in one community.

### 3.2.2. Dynamic equilibrium with full sorting

Consider first the equilibrium with full sorting of types across communities. This is simple, because the fraction of each dynasty settling in the city is just  $x_t^\gamma = 1 - x_t^\lambda$  - cf. (14) in the appendix. Hence, (7) reduces to:

$$x_{t+1}^\lambda = (1 - \bar{p}) + (2\bar{p} - 1)x_t^\lambda$$

Hence, this dynamic equation has a single steady state (denoted with an  $s$  subscript),  $x_s^\lambda = 1/2$ . Not surprisingly, given the symmetry of the model, in the steady state the population is split in half, with all the citizens settling in the city and all the clannish types settling in the clan. Moreover, since  $1 > \bar{p} \geq 1/2$ , the steady state is stable and the adjustment to the steady state is monotonic. While we remain in this equilibrium, any small permanent change in any of the parameters of the model has no effect (either temporary nor permanent) on the preference composition of the population, nor on the distribution of types across localities. Intuitively, with full sorting, the distribution of individuals across communities is entirely driven by their preferences, and cannot be affected by other parameters of the model. Hence the evolution of preferences in society is also entirely determined by its own past history and cannot reflect the influence of any other economic or social force.

By the results of the previous subsection, we have an equilibrium with full sorting if and only if  $x_t^\lambda \in [\underline{x}, \bar{x}]$ . Combining these dynamic results with those of the previous subsection we thus have:

**Proposition 3.** *Suppose that the initial fraction of the clannish population,  $x_0^\lambda$ , is such that  $x_0^\lambda \in [\underline{x}, \bar{x}]$ . Then, over time the fraction of population with clannish values converges to  $x_s^\lambda = 1/2$ , and both in the steady state and throughout the adjustment process all the clannish types settle in the clan while all the citizens settle in the city.*

### 3.2.3. Dynamic equilibrium with segregation in the clan

Next, consider the equilibrium where the clannish types are segregated in the clan, while the citizens are present in both the clan and the city. Here the derivation is more cumbersome, so we relegate it to the appendix. But the logic is simple. In this equilibrium, some citizens are attracted to the clan. This in turn influences the preferences of their offspring, which are more likely to become clannish types. Hence in the steady state the clannish population exceeds 1/2. If the differential birth rate of clannish types between parents living in the clan and in the city (the term  $(\bar{p} - p)$ ) is small, however, the steady state is stable. Hence, given that the initial condition of preferences is in the region corresponding to this equilibrium, society remains forever in this region and it converges to a steady state where the clannish types are a majority and city size is correspondingly small.

More precisely, let  $x^{\lambda c}$  denote the steady state fraction of clannish types corresponding to this equilibrium. The appendix proves:

**Proposition 4.** *Suppose that the initial fraction of the clannish population,  $x_0^\lambda$ , is such that  $x_0^\lambda \in (\bar{x}, x^{\max})$ . Suppose further that  $x^{\lambda c} \in (\bar{x}, x^{\max})$  and that  $(\bar{p} - p)$  is sufficiently small. Then, over time the fraction of population with clannish values converges monotonically to  $x^{\lambda c} > 1/2$ , and both in the steady state and throughout the adjustment process all the clannish types settle in the clan while the citizens mix between the clan and the city.*

As further discussed below, this steady state, with most of the population settling in the clan and only a minority in the city, captures the social organizations that prevailed in China - hence the  $c$  superscript to denote this equilibrium.

Note that in this equilibrium, changes in the deep parameters of the model have permanent effects on the distribution of values in society - they impact on the steady state  $x^{\lambda c}$ . For instance, if the clan becomes more efficient in providing public goods to its members, more citizens are attracted to the clan, and over time a larger fraction of the population acquires clannish values.

### 3.2.4. Dynamic equilibrium with segregation in the city

Finally, consider the other equilibrium with segregation, where the citizen types are all in the city, while the clannish types are present in both communities. Here the logic is the reverse of that in the previous equilibrium. Since some clannish types are attracted to the city, their offspring are more likely to become citizens. Hence in the steady state the fraction of clannish types in the population ends up being a minority, and if  $(\bar{p} - p)$  is small the steady state is stable. More precisely, let  $x^{\lambda e}$  denote the steady state fraction of clannish types corresponding to this equilibrium. The appendix proves:

**Proposition 5.** *Suppose that the initial fraction of the clannish population,  $x_0^\lambda$ , is such that  $x_0^\lambda \in (x^{\min}, \underline{x})$ . Suppose further that  $x^{\lambda e} \in (x^{\min}, \underline{x})$  and that  $(\bar{p} - p)$  is sufficiently small. Then, over time the fraction of population with clannish values converges monotonically to  $x^{\lambda e} < 1/2$ , and both in the steady state and throughout the adjustment process all the citizen types settle in the city while the clannish mix between the clan and the city.*

The specific conclusion that the majority of the population in this steady state settle in the city is due to the symmetrical structure of our model. Generally, in this steady state, more of the population settle in the city and less in the clan. It thus captures the social organizations that prevailed in Europe - hence the  $e$  superscript to denote this equilibrium.

Here too, as in the previous equilibrium, the steady state distribution of values is affected by changes in the model's parameter: whatever makes the city more or less attractive to the clannish types has permanent effects on the proportion of individuals with clannish values.

## 3.3. Discussion

Contrasting the last three propositions, we see that even small differences in initial cultural traits in otherwise identical societies can lead to lasting divergences in social organizations, value systems and institutions. Moreover, temporary changes in the economic, cultural, or social underpinnings of the clan and the city can have a permanent impact on the trajectory of cultural, social, and institutional evolution.

In particular, Inter-temporal complementarities imply that a society that starts out with a diffuse sense of loyalty to the clan is more likely to end up mainly relying on the clan to provide public goods, and only a small fraction of the population will be drawn towards the city. This situation corresponds to the equilibrium with segregation in the clan, where all the clannish types remain in the clan, and the citizens are distributed both in the clan and in the city.

In this equilibrium city size is small and clan size is large for two reasons. First, because the majority of the population has clannish values, these individuals find it optimal to remain in the clan. Second, because only some of the individuals with generalized morality (the citizens) are induced to stay in the city (these are the individuals with a high personal gain from being in the city, that is, a high realization of the agent-specific parameter). Being large, the clan is more attractive than the city, benefiting from economies of scale in public good provision and the low cost of providing these goods based on limited morality. This situation perpetuates because the citizens living in the clan are more likely to have clannish offspring, compared to the citizens who associated with the city. We associate this equilibrium with the arrangements that prevailed in China, where loyalty to the clans that provided public goods was widespread.

A society that starts out with an emphasis on generalized morality is more likely to end up the situation captured by the equilibrium with segregation in the city. Here all the citizens, that is, those whose morality is generalized and individualistic – remain in the city, while the clannish types are found in both locations. The city is large (and the clan is small) for two reasons. First, the city's large population, drawn from many dynasties, can provide more public goods. Second, since there are many citizens, free riding does not undermine the provision of public goods. The city is thus more attractive than the can even for some clannish types. Again, this situation preserves or strengthens itself over time, as the clannish types who are attracted to the city are more likely to give birth to citizen types. We associate this equilibrium to the situation in Europe.

These theoretical results draw attention to the key complementarity between culture and social organizations in the provision of public goods. To understand why social institutions evolved along different paths in China versus Europe, we need to focus on cultural differences in their respective early histories. Even if China and Europe had access to the same technologies, and neglecting the role of geography, international conflicts, and other environmental features, endogenous social institutions and cultural traits mutually reinforced each other. Different initial conditions in the diffusion of specific cultural traits can account for why social institutions and morality evolved in different directions in these two parts of the world.

#### 4. Historical analysis

This section examines the historical coevolution of social organizations and cultural traits in China and Europe, in light of the previous theoretical results.

We start by asking when did the different social organizations emerge in China and Europe. Section 4.1 documents that the bifurcation in social organizations emerged around the turn of the first millennium. Next, we ask whether value systems were indeed different in these two parts of the world, when social organizations started to bifurcate. Section 4.2 argues that this was the case, mainly due to their different religions: kin based in Confucian China, generalists and individualistic in Catholic Europe.

Third, we discuss the social context in which clans and corporations started to proliferate. Section 4.3 documents how the diffusion of clans and corporations was the result of a bottom-up process, as assumed in the theory. The impact of initial culture on social organization is particularly noticeable in China and Europe that period's episodes of intense expansion of settled areas and large migration. The intensity and the scale of these episodes implied high demand for local public goods but the state (and the Church in the case of Europe) did not have the capacity to provide them. The subsection also substantiates that the historical actors could and did chose social affiliations and the patterns of choices and organizational evolution as predicted by the above model.

Fourth, we discuss the subsequent cultural evolution, as reflected in criminal codes and charities. Section 4.4 describes that here too an important bifurcation took place with Europe becoming more individualistic and China more collectivist over time. Finally, in Section 4.5 we consider the evolution of other institutions and their interaction with prevailing social organizations. Here too a bifurcation between China and Europe can clearly be detected, with institutional developments in legal systems, market practices and state administrations that complemented the prevailing social organizations.

##### 4.1. The emergence of clans and corporations

When did the clan and the corporation become paramount social organizations in China and Europe respectively? Although there were clans in China and corporations in Europe long before the Tang-Song and the late-medieval periods respectively, it was during these periods that the clan and the corporation become widespread. Between the 9th and the 14th centuries the social organization of cooperation in China and Europe bifurcated.<sup>21</sup>

In ancient China, aristocratic and courtesan families used clans to concentrate their wealth and power.<sup>22</sup> These clans, however, had declined by the late Tang and early Song dynasties due to wars, civil wars and recruitment of public officials based on merit rather than blood. During that time, among Chinese families in general, a particularly important social organization was the “communal family,” a multi-generational household whose members held all property jointly. Communal families were “domestic unit[s] that had not divided – either property or members – for five, six, or even ten generations. In Chinese terminology it is referred to as if it was, at the same time, a *chia*, a family with common assets and budget, and a *tsu*, an organization including distant agnates” (Ebrey and Watson, 1986, p. 30). Recall that the clan, in contrast, is composed of multiple, economically independent, households.

When did clans emerge among commoners? In addressing this question, the distinction between clans' ancestors and founders is particularly useful. An ancestor is the individual from whom the clan traced its blood line while the founder is

<sup>21</sup> To identify when clans emerged, Telford (1986) examined about 1000 genealogies and we were inspired by his example. Without going into details, his conclusions are similar to ours. The limitations of Telford's data, are many but they are different from those of our datasets. Telford relied on the genealogies he happened to work on in the Columbia university corpus and, as Telford noted, which genealogies survived and why is unclear. Moreover, we do not know whether a clan's first ancestor is fictional or real. Our data set on genealogies specifies when a clan's founder lived, while Telford dates the origin of the clan based on features of the genealogy itself.

<sup>22</sup> Although lineages and kinship groups were active and important, they had distinct social character. See, for example, Zhenman (1992), p. 191.

	Ancestors			Founders		
	Total	Total	Decade avg	Total	Share	Decade avg
Pre Tang	220	2%		106		
Tang	2252	21%	78	644	3%	22
Five Dyn	481	4%	93	289	1%	55
Song	3857	36%	121	4772	22%	149
Yuan	1060	10%	119	2663	12%	299
Ming	1778	16%	64	8295	37%	300
Qing	1204	11%	45	5372	24%	200
<b>Total</b>	<b>10852</b>	<b>100%</b>		<b>22141</b>	<b>100%</b>	

The genealogy database w/o repetitions. Ancient, probably mythological, clans excluded. Most (550/849) from the Han dynasty.

Fig. 3. Ancestors and founders per dynasty.

a specific descendent of the ancestor who established a branching clan. To illustrate the distinction, the founder might be the grandchild of the ancestor, and in this case, the genealogy mentions the grand-father (and possibly his sons and their sons) but subsequently delineates only the households in the founder's blood line. An ancestor is the trunk of the family tree, while the founder and his clan constitute a particular branch.

Although our model does not capture the distinction between ancestors and founders, it highlights how this distinction enables us to empirically identify a transition to a clan-based social organization. To see how, Consider two societies that differ (only) in that there are no clans in the first and everyone is a clan member in the second. Clearly, a new clan will be created by an ancestor in the first but by a founder in the second. Generalizing from this comparison, the relative number of clans created by ancestors and founders proxies the extent of clans in the population.

Our database contains 10,852 genealogies reporting the dynasty during which the clan's ancestor lived and 22,141 reporting the dynasty of the founder. The data (Fig. 3) confirms and amends the conjecture that “the clan as a Chinese institution in the pre-modern period is generally believed to have prevailed some 800 years, beginning with the Sung dynasty” (Fei and Liu 1982, p. 393).<sup>23</sup>

The first two columns in Fig. 3 (left panel) report the total and percentage of ancestors from each (row) period. The Song dynasty (960–1279) accounted for the largest number of ancestors, and 36% of ancestors lived during this dynasty. The Tang dynasty (618–906) came second with 21%. The period between these two dynasties, the Five Dynasties (and Ten States, 906–960), accounted for additional 4%. Thus, 61% of the clans that updated their genealogies after 1644 traced their ancestors to the period from 618 (when the Tang dynasty began) to 1279 (when the Song dynasty was defeated by the Mongols).<sup>24</sup>

The first two columns in the right panel report the total and percentage of clans created by founders. Comparing the share of clans created by ancestors and founders is therefore informative regarding if and when clans became widespread in China. The comparison again reveals the centrality of the Song dynasty. It was the last dynasty during which ancestors created more clans than founders. More generally, prior to the Song, ancestors outnumbered founders about 3 to 1 but after that period founders outnumbered ancestors 4 to 1. Prior to the Song, ancestors created between 78% and 62% of the new clans every period. During the Song, however, ancestors created 55% of the new clans, falling to 28% during the Ming and 18% during the Qing.

The last column in each panel reports the ten year averages of new clans created by ancestors and founders respectively. This measures the time-intensity of clan creation.<sup>25</sup> Again, the Song Dynasty stands out as one during which the time intensity of clans created by either ancestors or founders went up substantially. Moreover, consistent with our analysis, the time intensity of clans created by ancestors or founders subsequently diverged. The time-intensity of clans created by ancestors remained the same (61) during the Yuan and declined to 35 and 14 by the Ming and Qing respectively. In contrast, the time-intensity of clans created by founders jumped from 55 to 149 during the Song and continued rising to reach 300 during the Ming. At 200 during the Qing, it was still higher than during the Song.

Turning to Europe, the legal concept of corporation was developed in the Roman period during which corporations were an organizational form used by the state. Society at large, however, was not organized via corporations. Only during the late medieval period corporations became a salient social organization in Europe.

The evidence reveals the broad social reach of the corporations. In the 14th century the majority of the English urban population were members of fraternities and guilds (Richardson, 2004; Ashley, 1909; Sommerville, 1993). Self-governed

<sup>23</sup> 849 pre-Tang obs. were omitted, 550 from the Han, for likely misrepresentation of ancestry.

<sup>24</sup> Even if some of these ancestors were invented to unify those who sought to create a clan, this data provides a lower bound to the clan creation process. The imaginary ancestors must have been asserted to live prior to when the clan was formed.

<sup>25</sup> We do not discount the data by population because the relevant demographic variable is the population that is not already organized in clans. This data does not exist.

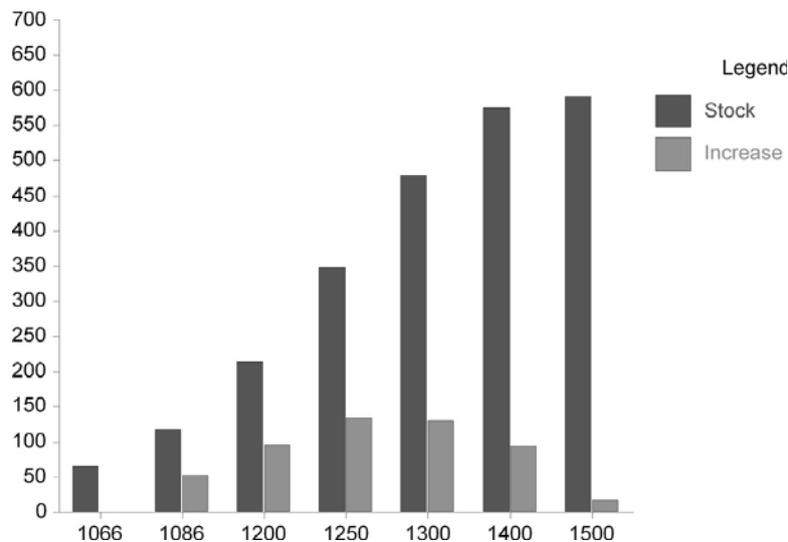


Fig. 4. Incorporation of English cities.

cities proliferated throughout Europe at the time. In England 268 cities were incorporated by a charter between 1042 and 1307 and their number rose to almost 500 not long after (See Fig. 4).<sup>26</sup>

Similarly, most European cities west of the Baltic Sea in the north and the Adriatic Sea in the south were incorporated (Pirenne, 1969, pp. 168–212; Cantoni and Yuchtman, 2014). Germany had, in 1422, at least 75 cities recognized by the Emperor as ‘free’ and by 1521 their number increased to 84 while the Hanseatic League included about 190 self-governed German cities (Dollinger, 1970, p. 116). In Flanders, a 12th century urban law recognized its cities’ self-governance (Nicholas, 1992, pp. 119–23).

Corporate bodies were pervasive in the countryside as well. Pre-modern European peasantry was largely organized in corporations (Reynolds, 1984, chapters 4–5; Brenner, 1987). To illustrate, even in “absolutist” Castile in 1500, about 20 percent of the population lived in its 30 self-governed cities and 60 percent lived in villages which were self-governed although subject to a lord (Nader, 1990, p. 3).

Corporations were created to serve many interests and some, particularly religious ones, became very large. The self-governed order of Cluny had 2000 affiliated monasteries circa 1300 in France alone (Davis, 1961, pp. 35–87). Around that time the Cistercians order had about 600 monasteries throughout Europe, from Ireland to Poland. Universities, Abbeys, Cathedrals and Parishes were corporations as well.

#### 4.2. Initial conditions: moralities and social organizations

Why did different social organizations emerge in China and Europe? Did initial cultural and organizational details matter, as we assume in the model? In particular, was China, on the eve of the transition, more clannish and less individualistic than Europe? This subsection addresses these questions and shows that cultural conditions were indeed very different in China and Europe around the turn of the first millennium, when the bifurcation in social organizations became more prominent.

##### Morality

To evaluate initial morality, we rely on the religious moral code that prevailed at the time (we treat Eastern philosophies as closely related to religion). In Europe, Christianity spread following the collapse of the Roman Empire and advanced an individualistic moral code. In doing so, the Church built on earlier Greek, Roman, and Jewish traditions of individual-level universal moral responsibility and moral obligation toward the community as a whole.

The Church promoted the creation of “a new society based not on the family but on the individual, whose salvation, like his original loss of innocence, was personal and private” (Hughes, 1974, p. 61). In particular, morality was identified with following the divine law an essence of which is that all humans are equal and one should treat non-kin and kin equally well. To illustrate, the New Testament explicitly identified moral obligations toward non-kin with following the divine law: “he who loves his neighbor has fulfilled the law” (Romans 13:8) and thereby gains grace and salvation. The idea was further developed by prominent Christian theologians such as St. Augustine of Hippo (354–430) and St. Thomas Aquinas (d. 1274). It was culturally salient even if not followed in practice.

Alternative moral codes competed with that of the Church. In particular, the Germanic tribes that gained political power after the fall of the Roman Empire re-introduced kin-based morality. The essence of their morality is reflected in their laws according to which kin were obliged to assist each other in seeking justice (Drew, 1991, p. 40). Moreover, the earliest

<sup>26</sup> Ballard (1913); Ballard and Tait (1923); Beresford and Finberg (1973). In Germany 2256 incorporated cities were created by the 17th century << [http://en.wikipedia.org/wiki/List\\_of\\_towns\\_with\\_German\\_town\\_law](http://en.wikipedia.org/wiki/List_of_towns_with_German_town_law) >>, (Cantoni and Yuchtman, 2014).

available code, the 6th century Salic law, maintains that membership in a large kinship group was necessary for various legal rights. The Salian Franks legal code went further to render relatives mutually liable for debts, legal penalties, and legal compensations (*ibid.*).

The generalized morality associated with Christianity, however, assumed dominance in Europe by the 11th century when the last main non-Christian groups had converted. Among those who were late in joining the Church were the Saxons, the Lombards, the Hungarians, and various groups in Scandinavia. As discussed below, their tribal structure dissolved and the associated kin-based morality declined. The Church's moral code became salient.

At the time that generalized morality triumphed in Europe, moral obligations toward kin became more salient in China. Moral obligations toward kin were emphasized in Chinese moral philosophy from as early as Confucius (551–479 BCE). At that time, a competing philosophy, known as the legalist tradition which advocated the morality of impersonal law-based social order. Confucius categorically rejected this position. To illustrate, the *Analects* (a collection of sayings and ideas attributed to him) contains the following exchange between Confucius and a governor representing the legalist tradition. "The Governor ... said to Confucius, 'in our village there is a man... when his father stole a sheep, he gave evidence against him.' Confucius answered 'In our village those who are straight are quite different. Fathers cover up for their sons, and sons cover up for their father. Straightness is to be found in such behavior.'" (*Analects*, XIII, 18). The Qin dynasty (221–206 BCE) that unified China supported legalism but was defeated by the Han dynasty that promoted Confucianism.

For much of the first millennium, however, Confucianism was also challenged by Buddhism that, at the time, downplayed obligations toward kin. Similar to Christianity it emphasized individual morality and moral obligations to the community of believers and not to one's kinship group. By the end of the first millennium, however, Neo-Confucianism regained momentum by adopting aspects of Buddhism appealing to the masses. It still maintained the premise of moral obligations toward kin, and in response Chinese Buddhism adopted it as well. As a result, moral obligations toward kin became salient.

### **Social organizations**

It is impossible to evaluate the extent to which the morality articulated by the Church and Neo-Confucianism actually prevailed in the population at the time. More is known, however, about social organizations. Although clans and corporations were known in China and Europe prior to the bifurcation, they were used only for narrow and specific purposes. Moreover, large kinship groups in Europe were on decline in the second half of the first millennium.

Large kinship groups prevailed in China long before clans became common. Confucianism, after all, strengthened kinship groups by viewing marriage as a "union of two surnames, in friendship and in love" (Dawson, 1915, p. 143). Apart from the surname, an important social organization was the communal household. As already discussed, it was composed of all the nuclear patrilineal families tracing their origin to a particular male ancestor (and see Cohen, 1990, for the variety of ways it was done in China).

In Europe, during the ancient period, large kinship groups were common. Although they were weakened as citizenship increasingly became the bedrock of the legal and social order of the late Roman Empire. They were revived by invading Germanic and other kinship-based groups (such as the Saxon, and the Hungarians). Tribalism in Europe, nevertheless had dissolved by the end of the first millennium. Among the many pieces of evidence is the observation that by the 8th century the term family among the Germanic tribes denoted one's immediate family.<sup>27</sup> Another is the observation that the English legal code held neighbors, not relatives, responsible to each other. Similar change seems to have transpired on the continent as well.<sup>28</sup> Tribes and lineages, by and large, were no longer institutionally relevant (Guichard and Cu villier, 1996).

The Church contributed much to the decline of large kinship groups in Europe. Specifically, the Church's marriage dogma discouraged practices that enlarged the set of one's relatives and their coherence, perhaps in order to strengthen the role of the Church in society. For example, although the New Testament does not prohibit or condemn polygamy, the Church began rejecting it as the Roman Empire was declining. It similarly objected to child adoption, concubinage, easy divorce, and remarriage. Perhaps most importantly, the Church curtailed practices through which kinship perpetuated such as kin marriages and parental control over marriages.<sup>29</sup>

### *4.3. Migration and the choice of social organizations*

The model builds on the idea that social organizations evolve out of a bottom-up process in which individuals choose which organizations to join based on interest and cultural affinity. This idea is consistent with how social structures emerged in China and Europe from circa 1000 CE, when in both regions a large resettlement and expansion of population took place during which settlers provided many of the local public goods. In other words, large-scale migration, together with a need for local provision of public goods, created a unique opportunity for a bottom-up process of social and cultural evolution.

<sup>27</sup> Clearly, the European family did not evolve monotonically toward the nuclear family, nor was its evolution geographically and socially uniform.

<sup>28</sup> Quantitative evidence from Europe reveals that when the clans were proliferating in China, kinship groups were marginal in Europe. Cousins, judging from testimonies in English court rolls from the 13th century, were not more likely than non-kin to be in each other's presence (Razi, 1993). In 1377, there were approximately 2.3 individuals over the age of thirteen per-household (Schofield, 2003, p. 83). The mean household size in five English parishes in the 16th century ranged from 4.05 to 6.05 and that of 100 parishes from the 16th to the 19th century was 4.788. Only about 10% of the households had a resident kin (Laslett, 1969, pp. 204, 207, 218). The mean household size of those receiving poor relief in Strasbourg in 1523 was similar (Jütte, 1996, p. 382).

<sup>29</sup> E.g., Mitterauer and Sieder (1982); Goody (1983); Ekelund et al. (1996); Herlihy (1985); Greif (2006a), chapter 8, and Greif (2006b).

Dynasty	East	North	South Central	Others	Total	East	North	South Central	Others
Pre-Tang	498	16	99	19	632	79%	1.4%	8%	1.6%
Tang	917	50	159	43	1,169	78%	4.3%	14%	3.7%
Five Dyn	318	7	32	21	378	84%	1.9%	8%	5.6%
Song	2,880	56	444	66	3,446	84%	1.6%	13%	1.9%
Yuan	1,216	50	217	34	1,517	80%	3.3%	14%	2.2%
Ming	3,116	306	610	111	4,143	75%	7.4%	15%	2.7%
Qing	1,193	61	402	59	1,715	70%	3.6%	23%	3.4%
	10,138	546	1,963	353	13,000	78%	4.2%	15%	2.7%

The genealogy database w/o repetitions. The provinces (un 2005 boundaries) in the East are Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, and Shandong.

Fig. 5. New clans: Regional and spatial distribution.

In both regions (China and Europe), individual-level choices regarding whether to immigrate and with whom shaped the evolution of social organizations.

#### 4.3.1. Migration in China and Europe

Clans emerged in China during the Tang-Song period (section 4.1). Did they emerge, as we conjecture, in the context of migration? Were they important providers of local public goods? The evidence, presented in this subsection, reveals that this was the case. More than 80% of the clans date from this period and were created in seven provinces located in the East of China. These provinces – which we refer to as the East – were also the ones to which Chinese migrated at the time (this is part of the longer population movement from the North to the South). The migration was so large by the end of the Song dynasty that it forever altered the territorial distributions of the Han people. Previously the majority of the Chinese resided in the North, the birthplace of the Chinese. Subsequently, the East became the most populous.

Fig. 5 presents the spatial and temporal distribution of the 13,000 clans for which we know the dynasty and the regions in which the first among the known ancestors or founders lived. The right panel presents the number of observations for each region and dynasty pair while the right panel provides the percentages. Three regions – the Northeast, the Southwest and the Northwest – are combined in the “others” column.<sup>30</sup>

The East evidently was the birthplace of the Chinese clans. In every dynasty, more new clans originated in the East than from all other regions combined. On average, almost 78% of all clans originated in the East. Consistent with our conjecture, the East also the target of migration during this period. This was a major demographic transition, probably the largest in terms of population share in Chinese demographic history. The East replaced the North as the most populated region. The North's population share was between 49 to 56% during the Tang (742) compared to between 12 and 34% in the East. At the end of the Song Dynasty, however, the North's share was about 10% compared to between 46 and 68% in the East. Although the North recovered somewhat by the Ming, the East retained the largest share.<sup>31</sup> Moreover, this period of migration was triggered by political, climactic, and economic events that also weakened the state (e.g., Kuhn, 2009, chapter 4; Lary, 2012. Cf. Liu, 2005). These events “produced large scale migration within the Chinese world” (Lary, 2012, p. 39) that perhaps peaked during the Song when “military pressure from the North and climactic changes in that region led to a near-panic flight migration” (Lary, 2012, p. 48). Private provision of local public goods was an unavoidable component of this migration (Perkins, 2013, Appendix H; Lary, 2012, p. 47).

The genealogy database also provides direct evidence regarding the link between these large-scale population movements in the context of a weak state and the rise of the clans in China. Specifically, the evidence reveals first, that clans were formed when the state was weak and second, that migration and clan proliferation were particularly common when, as was the case during the Song dynasty, disorder was localized in the area where the state was formerly strong. The response was migration to the more secure East, relying on the clan to provide local public goods. Our conjecture also predicts that once the situation outside of the East becomes more conducive to resettlement, clans will be the mechanism through which resettlement will occur. Indeed when the population in other regions recovers (Perkins, 2013, pp. 195, 207) the share of clans in those other regions also increases (see Table 5).

Fig. 6 shows a pattern in terms of the migration of founders. Before the Song, founders rarely migrated. Starting in the Song, founders – including those whose ancestors lived before the Song – migrated in large numbers. Fig. 6 presents data regarding the 2945 clans that were created by a founder who emigrated from his ancestor's province. The table's last row reports the number of ancestors from the column dynasty who had a descendant that founded a clan in another province. Each cell specifies the share of the founders living in the row dynasty whose ancestors lived in the column dynasty and founded a clan in the row dynasty. The last column reports the number of clans formed during the row dynasty.

<sup>30</sup> Regions in contemporary provinces: North: Beijing, Tianjin, Hebei, Shanxi, Neimenggu. East: Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong. South-Central: Henan, Hubei, Hunan, Guangdong, Guangxi.

<sup>31</sup> Population data from Perkins (2013), p. 195 and is based on the provincial data due to multiple definitions of the regions. The population range controls for changing provincial boundaries.

Founder's dynasty	Ancestor's dynasty						Total
	Tang	Five_Dyn	Song	Yuan	Ming	Qing	
Tang	0.06						18
Five_Dyn	0.02	0.02					887
Song	0.34	0.46	0.29				658
Yuan	0.13	0.07	0.17	0.18			578
Ming	0.32	0.34	0.35	0.46	0.41	0.01	37
Qing	0.12	0.12	0.18	0.36	0.58	0.99	320
Total	103	375	69	1122	607	222	2498

The genealogy database. No repetitions.

Fig. 6. Dynastical share of founders' migration by ancestor dynasty.

Note first that the evidence reaffirms the above conclusion that the Chinese clan established itself during the Song Dynasty. Of the 2495 founders that migrated to another province, 1120 had (or alleged to have) ancestors dating from the Song Dynasty. In addition the data here provides evidence linking migration and clan formation. Specifically, more clans were created and more existing clans migrated when migration enabled resettling in a more secure area. For clans established by founders whose ancestors lived during the Tang dynasty, only 8% migrated prior to the Song. Similarly, only 2% of founders whose ancestors lived in the Five Dynasties Period migrated during that time. In contrast, 29% of the founders with ancestry in the Song, moved to another province during this dynasty. Perhaps surprisingly, the percentage of founders with Tang ancestry who migrated was 34% and that with ancestry in the Five Dynasties was 49%.

If clans emerged in the context of weak states, why did the Tang-era clans not migrate en masse during the Tang? Our conjecture provides an explanation. The collapse of the Tang was due to internal revolts and not external pressure, implying that a clan could not escape the upheavals by migrating. The same held true during the Five Dynasties and the Yuan. The situation under the Song was different, as one could have escaped the deteriorating situation in the North by moving elsewhere.

In Europe, large-scale migration occurred as forests were cleared and areas previously inhabited by Slavs and Muslims were resettled. Here too, migration took place in the context of weak central authorities (either political or religious). The Carolingian empire disintegrated in the 9th century while the Papacy was de-facto captured by the Roman nobility. Neither the state nor the Papacy had an effective administration capable of providing local public goods, in a period of large resettlements of population (e.g., Greif, 2006b).

The various pieces of evidence above also cast doubt on the possibility that the data collection process was biased in favor of preserving relatively more clan information in the East. This possibility cannot simply be dismissed because only in the East were there early scholarly efforts to preserve genealogies before the Cultural Revolution, during which genealogies were systematically destroyed. However, this early preservation was due to the process of clan formation itself. The scholarly effort to save genealogies is not exogenous but is due to the longer history and stronger impact of clans in the East.

#### 4.3.2. The choice of social organizations

An important premise of our analysis is that individuals can choose their social affiliations. Was this the case? Moreover, does the evidence also confirm the prediction that, over time, the proliferation of clans and cooperations increasingly influence choices?

*China.* It is useful to begin considering the case of China by noting that, generally speaking, the Chinese authorities were not directly involved in forming clans although their policies coordinated on and increased the benefit of creating clans. In the important case of the Song dynasty, the authorities encouraged the creation of clans by allowing commoners to keep genealogies and create clan trusts.

To identify the process of choices that influence outcomes consider first the factors influencing migrations as a society becomes more clannish. The model suggests a specific pattern of migration. Early on, when clans are few and small, individuals are more likely to migrate on their own, because the benefits of migration will more often outweigh the benefit of attachment to the clan and there are few clans a migrant has to face when resettling. But as clans become larger and more numerous, clan membership becomes more beneficial and there are likely to be more clans a migrant has to face when resettling. Thus, coordination among a clan's members is necessary to induce migration that otherwise would not be individually rational. The clan or a branch is more likely to be the unit of migration. In other words, early on we should expect more individual migration, but as clans become larger and more im-

	Migration by individuals				Migration by clans		
	Total	Share	Index		Total	Share	Index
Tang	36	0.72	100	1650	66	0.32	100
Song	324	0.61	85	1700	158	0.36	113
Late Song	278	0.56	78	1750	422	0.42	132
Yuan	333	0.56	78	1800	1,005	0.44	137
Ming	953	0.61	84	1850	2,136	0.48	150
Qing	693	0.56	78	1900	4,410	0.51	159
Total	2,617				8,197		

The genealogy database w/o repetitions. Pre-Tang and the Five Dynasties excluded. Inter-provincial migration by founders (left panel) and clans (right panel).

Fig. 7. Inter-provincial migration by founders and clans, by ancestors' dynasty.

portant, we should observe whole clans (or a branch) migrating together. The historical evidence is consistent with this prediction.

To identify individual-level migration in the early centuries of clan formation, recall the distinction between clans' ancestors and founders. An ancestor is the trunk of the family tree, while the founder and his clan constitute a particular branch. The database contains 2,617 clans whose genealogies report the dynasty and the (distinct) provinces of their ancestors. In each of these cases, the ancestor and the founder lived in different provinces revealing migration. Moreover, a clans had already existed when the founders migrated and created a new clan (branch) implying, by definition, individual-level choice. There are also 8,197 observations that reveal clan migration (see below).

The left panel in Fig. 7 presents the data about founders' (individual-level) migration.<sup>32</sup> The first column lists the dynasties while the second and third reports the per-dynasty number and share of founders who migrated. To facilitate observing the time trend, the third column presents the second column as an index (Tang = 100). As predicted, the index declined from 100 to 78. This is a lower bound on the share of migrants because we know that many of the ancestors migrated as well and moreover, we excluded inter-county migration.

The right panel in Fig. 7 summarizes migration by clans for every 50 years from 1650 to 1950. It confirms an additional prediction: a rise in clan migration over time. A clan is identified as one that had migrated if the province of the founder differs from the one in which the clan updated its genealogy. The migration time is entered in our database as the date of the first genealogy revealing migration. This procedure identified 8,197 clans that migrated. The distribution of clan migration – the total, a period's share and an index (1650 = 100) are presented in the right panel. The data confirms the prediction, as the index is monotonically increasing over the six periods by 50%!

*Europe.* In Europe we expect to observe the opposite pattern of migrations: when Europe was collectivist, migration was done by large kinship group; later on, as individualism prevailed and corporations became more diffused, migration was by individuals, often aided by corporation and often created new corporations in the process. In short, European migration should be the mirror image of China. In Europe, migration of large kin-based social groups should be common early on, but by the late medieval period it should be undertaken by individuals, families, and groups sharing common interests.

Many pieces of evidence from Europe, although some of them are qualitative, provide ample support. For example, as is well known, large kinship groups were central to the great migration wave that transpired following the fall of the Roman Empire. Various areas in Europe still bear the names of these kinship groups Saxony is where the Saxon settled in Germany and Sussex is where Saxons created a kingdom in Britain during the 5th century. Among the many other examples are Lombardy, Burgundy, and Bavaria.

In the medieval period, however, urban and rural expansion in Europe generally resulted from cooperation among non-kin who joined to advance their economic and other interests. In the countryside, feudal lords organized as-hoc groups of settlers to clear new lands, endowed monasteries with marginal land to develop. Lords also encouraged urban growth to increased demand their estates' agricultural product and their income from commercial activity (Duby, 1962, chapter 1).

Individualistic migration, often supported by corporate bodies, became common in the late Medieval period. These corporations took the form of self-governed commune, municipal corporations, etc.,. In the late 11th century, for example, some important Genoese families signed a contract to create a company – later known as the Commune of Genoa – to pursue

<sup>32</sup> About 11% of the clans claim an ancestor from the pre-Tang period and thus aristocratic origin. Because such origin was socially important, the claim is more likely to be false. The analysis ignores such observations but its conclusions are robust to including them.

their common interests. Somewhat earlier, the dispersed Venetian households organized themselves as a republic to mobilize military force to assist Byzantium in blocking a Norman invasion from Sicily. The reward, lucrative commercial privileges, greatly contributed to Venice economic success (Greif, 1998 and González de Lara, 2008). In both cases the communes had to deal with the remnants of their clannish past (*ibid.*). More generally, the late medieval period experienced a “republican revolution” as many communes sought – through cooperation among non-kin – independence from their feudal lords. In areas with relatively strong clannish inheritance, such as Italy, the emerging communes – based on common interests – used legal and other means to subdue noble large-kinship groups. Florence under the Medici illustrates that they were not always successful (e.g. Waley, 1988; Duffy, 1903).

While kinship was the basis for the Chinese settlement process, cooperation among individuals unrelated by blood was the hallmark of the rapid process of urbanization in Europe. To illustrate, the earliest ancient Venetian public document enabling the study of family structure is from 1090. It concerns a gift from the Byzantine emperor to a local monastery. The 127 individuals mentioned in the document have 91 different last names (Folena, 1970-1). Later documents containing the lists of the people elected to the Great Council from 1261 to 1296-7 has names of 392 individuals with 119 last names (*ibid.*). In Genoa, 136 families constituted the top mercantile non-aristocratic merchants from 1375 to 1450 (Van Doosselaere, 2009, Appendix E).

As our analysis predicts, subsequent migration became increasingly individualistic. Consider the well documented case of England that attracted at least 64,125 immigrants from 1330 to 1550.<sup>33</sup> These immigrants came from all over Europe with only 17% coming from the top three regions (France, Scotland, and Normandy). Social relations among migrants are known in more than 17,000 cases and reveals that less than one percent of the migrants came with any relative beyond the nuclear family. Servants (1,850 of them) were the largest group outside members of the nuclear family that accompanied the migrants. In fact, servants were the single largest group of immigrants; 11,732 of them arrived to serve non-kin.

The individualist nature of Europe’s social organization is evident from the broad distribution of last names in cities and villages. European settlements were not kin-based. To illustrate, in 1541, only 7.85 percent of the population of London had the top 10 most common last names. Low concentration of last name, more generally, is evident from the 356,834 English marriage certificates in the Vicar-General Marriage License Index (1694 to 1826). There are 52,872 different names in the index.<sup>34</sup>

More generally, European rural and urban settlements, unlike the Chinese clans, were not kin-based. Consider, for example, the distribution of last names in English towns according to the 1881 English census. The mean proportion of the population with the most common surname was 0.079 and the mean proportion of the most common 10 surnames was 0.39. If, in each county, we omit the town with the most common surname, the mean proportion of the population with the most common surname was a mere 0.018. Moreover, this is an upper bound because in England, and Europe generally, the common surnames are based on occupation (e.g., Taylor and Smith) or a first name (Anderson, Johnson). These names therefore were held by individuals with no kinship ties. The surname Smith, for example, was the most common surname in 30 of the 39 English counties (in 1881).<sup>35</sup>

To sum up, in both China and Europe, individuals could migrate and settle in the company of their kin or with non-kin. Yet, the responses in China and Europe differed. Chinese settlement was “based on kinship ties” and migrants “constructed a new kin-group on the frontier for the purpose of land clearance and developing an irrigation infrastructure” (Rowe, 2002, p. 534). A similar pattern of kin-migration also transpired in later periods when migrants moved to repopulate regions devastated by natural and man-made disasters. In Europe, by contrast, migration since the late medieval period was done by families while settlements, in the continent and later in the New World, was done by cooperation among non-kin. More often than not, the social organization took the form of a corporation.

#### 4.3.3. *Social organization in the urban and rural areas*

Identifying the city and the clan in our analysis literally as cities and rural communities implies that urbanization would be higher in Europe. The evidence concurs. The share of the population living in cities with more than 10 or 40 thousand people was higher in Europe than in China (Fig. 8).<sup>36</sup> This observation is even more striking given that in the 10th century or thereabout, China was more urbanized than Europe. Urbanization in Europe increased following the dissolution of the large kinship groups. In China, large administrative cities were created by the state and (at least since the Ming dynasty) small market towns were created by clans to consolidate their control.

While reassuring, many factors might impact urbanization and therefore it is important to further evaluate the explanatory power of our analysis regarding urban and rural distinctions. One such important distinction regards urban-rural migration. In China, emigration from rural clans to a city was usually temporary (by merchants, scholars, craftsmen, etc.). Family

<sup>33</sup> Based on information collected by the National Archive, <https://www.englishimmigrants.com>. The data is mainly based on tax records.

<sup>34</sup> London: <http://www.ellipsis.cx/~liana/names/english/engsurlondon1541.html> (Index of Names in the 1541 Subsidy Roll of London: Surnames of English men and women by Sara L. Uckelman. 05Agu06.) English marriage: <http://www.sog.org.uk/vg/vgstats.htm>.

<sup>35</sup> Calculated from the 1881 Population Census. <http://www.britishsurnames.co.uk/1881census/>.

<sup>36</sup> Other estimates, such as Rozman (1973) and Brandt et al. (2011-2013), qualitatively differ but qualitatively concurs with the estimates presented here. Rozman calculated an urbanization rate of 4.7 in mid Tang, 5.2 in mid Song, 6.5 in mid Ming, 6.8 in early Qing, and 5.9 in late Qing. See Maddison (2007), pp. 38–41.

	Europe	China	Europe	China
	>10k		>40k	
<b>1000</b>	0	3.1	na	na
<b>1500</b>	5.6	3.8	1.9	na
<b>1600</b>	7.6	4	3.5	1.7
<b>1700</b>	9.2	na	5.2	1.9
<b>1800</b>	10	3.8	5.6	1.7

Fig. 8. Urbanization in China and Europe.

members, including members of the nuclear family were often left behind and migrants returned when the particular business that brought them to the city ended. The permanent residents in cities were relatively few and they often resented the migrants. To illustrate, as late as the 17th century, in a relatively new city, “the majority of a city’s population consisted of so-called sojourners, people who had come from elsewhere and were considered (and thought of themselves as) only temporary residents .... Suspicions were always rife that sojourners could not be trusted” (Friedmann, 2007, p. 274).

In terms of the theoretical analysis, members of the large Chinese clans who moved to the city were clannish and contributed to the clan from afar. The result was a “clannish city” composed of a core of non-clannish individuals and new immigrants who, although living in the urban area, retained their clannish affiliation. As noted by a leading Chinese historian, those who moved to cities retained “their allegiance to the ancestral hall for many generations, the bonds of kinship being much closer than those of common residence” (Hu, 1948, p. 10). The antagonism by the urbanites, described above, had a base in reality.

Similarly, newcomers to Chinese villages were unwelcome and therefore resented or ignored (Hu, 1948, pp. 91–4; Ebrey and Watson, 1986 pp. 1–15). To illustrate, consider again the genealogy of the Ch’u clan from Kiangsi. In describing the social relations in their new location, the genealogy notes that “our village is the only one inhabited by the tsu [clan] of Ch’u .. it adjoins that of the tzu of Yü, but there is no community of interests or of administration between us, nor is there any ill-feeling however” (Liu, 1959, appendix 10, p. 112). More generally, custom and law (e.g., that local clan members have the right of first offer in the land market) rendered migration difficult.<sup>37</sup>

In Europe, unlike China, those with financial means could migrate with relative ease, although gaining residence or citizenship rights usually required some financial or labor contributions (e.g., minimum wealth, paying taxes for several years, etc.).

Why were migrants treated differently in China and Europe in both urban and rural settlements? Our theoretical analysis immediately suggests an answer. The clan economizes on the cost of enforcement and thus resented newcomers who would not contribute. The clan sought to maintain social cohesion, while the corporation sought to increase its tax base. In Europe both urban and rural settlements were corporations. They thus welcomed anyone who could contribute to their aggregate wealth. Moreover, the rural and urban corporations had the infrastructure required for taxation and in equilibrium most migrants could thereby be induced to pay. Screening based on up-front contributions and initial scrutiny mitigated adverse selection.

It should be stressed, however, that in China interest-based organizations were also commonly used to resolve common problems beyond the reach of the clans. For example, the construction, maintenance and operations of irrigation systems had to be conducted locally regardless of the distribution of the clans in that particular locality. In such cases, common interest was the basis for cooperation. The prevalence of local associations, alongside the clans, to maintain irrigation systems is revealed by the fact that clan rules, in general, say nothing about irrigation (Liu, 1959).

#### 4.4. The evolution of value systems

Two broad implications follow from the conjecture that the bifurcation in the organization of cooperation in China and Europe was due to social and cultural complementarities. First, clans and corporations should become more common in each society respectively. Second, the value systems should evolve consistently with the prevailing social organizations. In other words, if different social organizations emerged in China and Europe because these two societies had initially different cultural traits, these cultural differences should become more pronounced over time, as a result of the mutual reinforcement of culture and social organizations. Is this coevolution of morality and social organizations consistent with the historical evidence?

We already provided evidence on the persistence and increasing importance of clans and corporations in China and Europe respectively. This subsection examines whether moralities associated with the clan and the corporations evolved consistently. Uncovering the evidence is challenging because morality is inherently unobservable and, as an individual-level

<sup>37</sup> One might wonder whether there is a contradiction between the claim that migrants were resented and the previous discussion of the formation of clans in the context of migration. There is no contradiction, however. Migration to unsettled areas in China (regardless of whether the area was previously settled or not) was facilitated by the fact that all land belonged to the Emperor. Anyone could claim user rights on uncultivated land by registering his cultivating area and pay tax.

attribute, usually leaves behind only subtle evidence. Accordingly, we rely below on two sets of indirect historical evidence regarding morality: the criminal law and voluntary charity.

#### 4.4.1. Criminal law

The punishments imposed on criminal offenses reveal morality because crime, by definition, is immoral and it is a human propensity to impose harsher punishments on behavior of a higher level of immorality. The punishment should fit the crime. Criminal law history in China and Europe is likely to reflect their distinct and possibly changing moral basis. The value of criminal law for cultural analysis is vindicated by the observation that early in their history, when kinship-based organizations prevailed in both, their criminal legal code similarly conditioned the punishment of a given offense on the identity of those involved.<sup>38</sup> Subsequently, however, punishments in Europe became increasingly independent from identity, at least *de jure*. In China identity became more important over time.

The temporary surge and then decline in moral obligations to kin in Europe is clear from legal codes. Consider the earliest Germanic legal code of the Salian Franks (6th century). The code imposes “blood money” on a killer of another person. A killer of a (free) Frankish man or a woman was to pay 200 solidi to the victim’s relative as compensation. If the crime was committed toward a public official, the penalty was higher reaching as much as 1800 solidi if the victim was serving in the army. The highest blood money for killing a Gallo-Roman, however, was generally half of the amount imposed for killing a Frankish person (Drew, 1991, pp. 45–9).

In subsequent centuries, however, the theory and practice of criminal law drastically changed. Late medieval legal writers in England, Germany, and France emphasized the “principle [that] all human beings are equal” (Kelly, 2003, pp. 146–7). Moreover, the “communities that had a strong sense of the individual’s responsibility and his citizenship or membership” objected to “trial by battle and by ordeal” (Kelly, 2003, pp. 147–8).

The punishments specified in European criminal codes did not depend on whether the parties involved were kin. This is most evident in communal laws, which were based on the principle of equality before the law and reflected generalized morality. To illustrate, consider the 14th century statute of the Piedmontese commune of Bugelle (Biella). The statute declares that “the consuls can and should render justice and a fair reckoning in respect to each man of Biella, each person residing in Biella, and any one who seeks justice from them” (Sella, 1904, sect. 1.2). The same principle prevailed in England during that period. The judges in Exeter and Southampton took an oath to “render justice indifferently to rich and poor... [and] to do and keep justice to all persons, rich and poor, denizens and strangers” (Tait, 1936, p. 275). By the 17th century, the criminal law imposed a higher penalty on the rich for the same crime to equalize the severity of the punishment (Kelly, 2003, pp. 238–9).

In contrast, under the late Imperial Chinese law, punishments depended on kinship. Generally, penalties were most severe for crimes committed against senior relatives, less severe if committed against those outside of the extended family, and least severe if committed by senior family members against their younger kin. Even in “the early twentieth century, a father could kill his son without incurring much more than a reproof and a warning, while a son who killed his father, or even his only slightly older brother, faced a very hard time. Only the killing of friend by friend came to court on an even keel, so to speak” (Gellhorn, 1987, p. 2).

#### 4.4.2. Charity

Whether charity – private contributions to assist others – is personal or impersonal is a good measure of moral obligations toward non-kin. Charity is personal when the giver donates to specific individuals he knows and it is impersonal otherwise. If limited morality was more important in China relative to Europe, personal charity among kin was more likely to predominate. In contrast, if generalized morality was common in Europe, impersonal charity to non-kin was more likely to predominate. This, indeed, was the case.

In pre-modern China, kin were the main source of charity either through clan-trusts or local temples (as was particularly common in multi-clan villages). The moral aspect of this practice is clear from the analysis of the view expressed by Fan Chung-yen (989–1052), the innovator of the clan trust. Fan “had ruled that the lineage should aid only relatives with lineage ties that were clearly documented in the genealogy” (Smith, 1987, p. 316). This had become the norm for hundreds of years. Permanent, non-Buddhist, impersonal charity organizations appeared, on some scale, only in the early 17th century. In surveying the evidence, Smith noted that “the first documented benevolent society appeared in ... Honan, in 1590” (p. 311) and concluded that only “during the late Ming (1368–1644) and early Qing (1580–1750) ... [were new organizations created] to voluntary or compassionate giving to the poor and needy outside one’s family” (1987, pp. 319–21).

Although the Chinese authorities encouraged impersonal charity, moral philosophers asserted that the diversion of assistance away from kin is immoral. A popular 17th century morality book “tells of a generous scholar who was derided by a member of his lineage for lightly giving money away to strangers” as a charity (Smith, 1987, p. 316). Even so, clans remained the main source of poverty alleviation. This limited morality logic confused pre-modern European observers. In 1851, the English economist John Ramsay McCulloch pondered the contradiction he saw between destitutions and generosity toward the poor. In his words, “the conditions of the poor are wretched in the extreme; they are frequently destitute of food... It is a curious fact, that though the Chinese be remarkable for assisting each other, particularly their own relations” (vol. 1, p. 361).

<sup>38</sup> Beyond the distinctions that were common in the pre-modern world between slaves/freemen and male/female.

Early 20th century clan-rules (1912–36) reveal the persistence of the kin-based welfare system. Liu (1959) examined 151 genealogies containing 316, according to Liu, (1959) clan-rules, some of which are from previous centuries. These are considered representative of the traditional clan rules (Liu, 1959) and half of the genealogies (75/151) contain sections concerning clan relief and aid of needy members (*ibid.*, p. 217). Another piece of evidence for the extent of personal charity is found in the seminal 1925 study of country life in South China. The study notes that the poor “depend largely upon the aid granted them by the village leaders from the income of the public property and upon the surplus over the cost of worship when they rotatively administer ancestral property” (Kulp, 1925, p. 104).<sup>39</sup> Similarly, the prominent Chinese historian of common decent groups Hsien-Chin Hu, noted that on the eve of Communist era clans were still prominent providers of welfare assistance to their members (1948, pp. 87–90).

In Europe, impersonal voluntary charity was common from the early days of the Catholic Church. By the 16th century, organizations providing impersonal private charity predominated. To illustrate, London in 1560 had about 35 poor relief-foundations and by 1700 there were more than 100 of them. In late 16th century Bristol, quarter of the wills made a donation for the “relief of the poor” while a century later 30 percent of the will in England made such donation (Ben-Amos, 2000). The French poor relief system, among others in Europe, was supervised by the state but was financed mainly by voluntary contributions.

Summarizing, the religions prevailing in China and Europe towards the end of the first millennium created different initial conditions. Moral obligations towards kin were stronger in China, while Christianity created a cultural predisposition towards generalized morality in Europe. These cultural differences manifested themselves in salient features of these societies such as the criminal code and charity. These distinctions became more pronounced overtime, together with the diffusion and consolidation of different social organizations, as implied by the theory.

#### 4.5. Complementary institutions

If the clan and the corporation were important in China and Europe, one would expect that the evolution of state and market institutions in these regions would reflect their impact. This subsection establishes that this was the case. In each region, state and market institutions complemented the prevailing social organizations in a manner that reinforced their cultural and social bifurcation. To be clear, this subsection is not aimed at delineating the complexity of the relationship between social organizations, states, and the markets. Rather, it only presents some evidence regarding state and market institutions that indirectly reveal the impact of pre-existing social organizations. In other words, the objective is to use evidence regarding institutions to evaluate our conjecture regarding the nature of the prevailing social organizations of cooperation.<sup>40</sup>

##### 4.5.1. State institutions

In China and Europe the state relied on the clan and corporation respectively for the provision of various public goods and administrative services.<sup>41</sup> Here we discuss two stylized facts illustrating the interaction between state institutions and social organization. First, in both regions the legal system was designed to complement enforcement provided by the respective social organizations. Second, limited and generalized moralities determined the relations between the state and its local administrators. Reasons of space prevent us from discussing other related issues.

*The legal systems in China and Europe.* Chinese and European legal systems shared much in common in the late medieval period, as in both regions the law was mainly territorially localized. In Europe, one lived under the law specified and enforced by his feudal lord or a corporate body such as his native city, guild, and religious order. The weakness of the territorial state and general insecurity facilitated localized enforcement. The subsequent extension of the territorial state combined with generalize morality to undermine the localized enforcement system.

The resulting legal systems varied from country to country, but throughout Europe their civil and commercial components aimed at regulating the relations among people, like the previous corporate laws. Generalized morality and the importance of the law in governing inter-personal relations is evident, for example, in the Napoleonic code, the quintessential example of the new legal order. Its premise was equal legal rights, and it was mainly a civil code regulating the relationship between individuals (regarding, for example, property, contracts, family, inheritance, and financial relations). Moreover, the court system incorporated the traditional corporation-based system. (On the European legal system see, for example, Berman, 1983.)

<sup>39</sup> Public property was “owned collectively by the sib-group” (Kulp, 1925, p. 123).

<sup>40</sup> Our analysis similarly provides a consistent explanation to other institutional distinctions such as the prevalence of the gentry, the household registration system, and the civil examinations system in China but not in Europe. For some recent works on these issues, see Huen (1996); Chen (2012); Ma (2007); Zelin et al. (2004); Huang (2001) and Bourgon (2002).

<sup>41</sup> For the administrative roles of the clans in China see, e.g., Huang (1985), pp. 224–41 and Hejindra (1998), pp.468–70. Some of the clans’ administrative duties were unofficial such as their role in tax (e.g., Deng, 2004, p. 37). In Europe, corporations such as self-governed cities, chartered companies, and banks collected tax, provided navies, mustered armies, administered justice and supported the poor (e.g., Pirenne, 1969; Tilly, 1989). In England, the confederation of the Cinque Ports in Kent and Sussex was the official provider of naval force to the Crown from 1155 to the 16th century. In Germany, various leagues of the Swabian cities (1331 to 1534) were responsible for law and order having, for a period, a standing army of 10,000 men. These leagues fought renegade dukes and played a decisive role in foreign wars.

The Great Qing Code		Clan Rules (151 clans, 316 rules)		
Issues	Articles	Issues	Rules	
Punishment	148	Intra family	906	
Revenues	81	Intra-clan	901	
War	70	Extra-clan	408	
Names & general	46	Beliefs and values	246	
Gov. personal	37	Common property		
Rites	26		Yes	249
Gov. Workers	12		No	67

Sources: Jones (1994), Liu (1959).

Fig. 9. The structure of the Qing code of law and clan rules.

China's legal tradition had originated long before the clan system emerged, and the Chinese state had always articulated and enforced a criminal code. In theory, one could approach the state's legal system regarding any civil and commercial matter and in fact, people approach the state seeking the resolution of disputes. Yet, the legal system was not aimed at adjudicating disputes among individuals. The commercial and civil law in China remained personal and locally enforced until the 20th century.

In fact, Chinese commercial and civil legal codes were ill defined and secondary in importance until the late 19th century, while compromise was the underpinning principle of civil and commercial adjudication.<sup>42</sup> China invested surprisingly little in legal infrastructure and its legal capacity declined over time. There was no judicial branch in the Chinese administration and adjudication was one among the many functions of the magistrates who usually had no legal training. A magistrate who hired a legal expert had to pay his salary and was punished if the verdict was later proven wrong. The number of legal specialists in China during the 19th century was a tenth of the number of lawyers in England at the time.<sup>43</sup>

Civil and commercial adjudications therefore was mainly conducted by the clans and their legal role was recognized by the state. A "localized lineage was normally the largest unit within which disputes between its members were settled" (Freedman, 1966, p. 114). Clans were expected to resolve civil and commercial disputes among their members and among them and non-members.<sup>44</sup> Ancestral halls served as a meeting place for clans' leaders who, among other roles, arbitrated disputes (Ruskola, 2000, p. 1631). Evidently, the comparative advantage of clans to discipline their members was sufficiently large that the state found it advantageous to let clans regulate interactions.

Our analysis explains why the central authorities preferred to rely on this quasi-private enforcement, despite the economies of scale in law enforcement. Limited morality reduced intra-clan enforcement cost and increased inter-clan enforcement cost. Thus the state had less to gain from creating an effective and impartial commercial and civil legal system. As noted by a prominent scholar of China, "because of the feeling of mutual responsibilities and because of its [the clan's] ability to maintain high moral standard among its members ... the state has found it convenient to leave to it considerable judicial powers" (Hu, 1948, p. 10). Moreover, an effective and impartial legal system would have undermined the clans, an outcome contradictory to the interests of the elders who controlled the clans and the state that used them. Clan rules regularly discouraged litigation and favored arbitration provided by the clan (Liu, 1959), while the state rewarded clans whose members did not use the court for a period of time.

The impact of the clans on the development of China's legal system is transparent from the structure of the code of law of the last Chinese dynasty, the Qing (1644–1912). Most of this code was devoted to regulate the relations between the state and individuals and among individuals only to the extent that it directly affected the state (Fig. 9). The role of the code is evident from its structure.<sup>45</sup> The articles that constituted the code were divided according to the ministries of the state. The largest single section concerns punishment for offenses, with 148 articles. It also specified the punishment of state officials and those who committed a crime against them. In other words, the code complemented the administrative structure of the state and was not designed to facilitate interactions among individuals. Family law, for example, appears under the revenue section because households were tax paying units.

<sup>42</sup> In civil matters, the state were particularly interested in enforcing legal rights over taxable land. For illuminating discussions of the legal system and the scholarly debate about its nature see also Nakamura (2004) and Ma (2007).

<sup>43</sup> Chen (2012), p. 2 and Fisher (1852), vol. 2, p. 153.

<sup>44</sup> Clans were not 'imperia in imperio' and dissatisfied clan members could appeal, and did appeal, to the Imperial legal system (Ruskola, 2000, p. 1663).

<sup>45</sup> The structure of the Qing Code probably followed that prevailing under the previous Ming dynasty. Changes introduced by the Qing without altering the structure therefore are not captured here.

In contrast, the quasi-legal rules that Chinese clans articulated on clan-specific civil codes. The right side of Fig. 9 presents the main issues contained in 316 clan rules that were specified in 151 genealogies (Liu, 1959). The genealogies were printed in the early 20th century but many of their rules were specified earlier. The largest single issue concerns intra-family relations (with more than 900 rules). Significantly for evaluating the importance of clans, the section of intra-clan relations has almost the same number of rules. The closeness of the clans is evident from the small numbers of rules (246) dealing with relations with non-clan members and the state.

The Chinese dual legal system was designed as Chinese policy-makers recognized that clans had a comparative advantage in enforcement. For example, one of the most outstanding Confucian scholars of the late Ming and early Qing Dynasty, Gu Yanwu (1613–82), argued that increasing the lineage's judicial authority would reduce the judicial workload and hence the size of the bureaucracy (Rowe, 1998 p. 383). Similarly, Chen Hongmou (1696–1771), a high-ranking official, a scholar and a philosopher who was held as a model provincial governor during the Qing dynasty, explicitly advocated relying on clans to reduce the size of government. As a governor in 1742, he granted lineage headmen considerable judicial and disciplinary powers over their kinsmen ((ibid., p. 378). More, generally, Chen “consistently supported the principle of lineage organization. He relied, for example, on the presumption of collective liability of lineage members for each other's conduct and debts ... He also actively supported the generation of well-endowed lineage estates ... for ... collective welfare purposes ... with the twin goals of ameliorating class conflict and reducing the size of government” (Ibid., p. 382–3).

*The role of bailiffs and runners in the administration of the state.* The distinct cultural and social foundations of cooperation in China and Europe manifested themselves also in the nature and capacities of state administrations. In China, the state could not rely on the local social organizations to implement policies contrary to their interests. Moreover, strengthening and institutionalizing lineage power increased the ability of clans to resist state authority (Rowe, 1998; Hung, 2009). As a result, the Chinese state authorities delegated to the clan the implementation of mutually beneficial policies, but relied on a parallel administration to implement policies which the clans did not favor.<sup>46</sup>

Such policies were physically implemented by a paid local staff, typically known as “runners” (yamen). The runners were so important that a late Imperial magistrate noted that they “were an official's claws and teeth, and their services could not be dispensed with for a single day or in a single task” (Ch'u, 1970, p. 57). Among other tasks the runners collected tax and debt, acted as a police force, arrested criminals and imposed punishments. In terms of the tasks they performed, the runner was the equivalent of the bailiff in England or the vogt in German speaking countries.

Although the tasks of the runners and the European bailiffs (we use this term generically) were similar, our conjecture implies that the runners and the bailiffs would have very distinct roles in supporting cooperation. If generalized morality prevailed in Europe, many of the bailiffs' tasks were in accordance to the prevailing morality. A bailiff who pursued a delinquent debtor or collected the poor rate from landowners was the means through which cooperation was achieved.

This, if our analysis is correct, should have not been the case in China, in which the runners were the means to enforce the will of the state when the interests of the state and the local officials contradicted the clan's interest.

The implication is that in China runners should have been looked down upon as immoral even by the magistrates who employed them. The runners were locals – a necessary condition for the lowest level administration to be effective at the time – who nevertheless were willing to take actions that harmed other locals, potentially even their kin. They were willing to put obedience to those who pay them to enforce the law above their moral obligations. In short, if our analysis is correct, one who became a runner in China had revealed himself immoral by the prevailing standard, while a European bailiff did not. If so, the Chinese runners were more likely to be individuals with low social rank who could not be trusted even by the authorities which they served.

In fact, most of the runners were poor, some had a criminal records, and most had no property (Ch'u, 1970, p. 63). The evidence regarding the legal designation of the runners confirms that the authorities held the runners who served them in contempt. Prior to the early 18th century, runners were “legally classified as “mean” people ..., a status comparable to that of a prostitute, actor or slave. Like all other “mean” people, they were discriminated against. They were not allowed to take civil service examinations and were prevented from entering officialdom. The law stipulated that any of them who took the civil service examinations or purchased an official title was to be dismissed and given 100 strokes. The offspring were similarly deprived” (ibid., p. 62).<sup>47</sup>

The distinction from Europe is striking. In England, for example, only a freeman could have been a bailiff, while in China a runner's legal definition was equivalent to that of a slave and a criminal. The adverse selection of runners and the institutionalized and cultural discrimination against them implied that runners would be corrupt unless deterred by the expected response of the magistrate. The historical relevance of this possibility is clear from the length to which the magistrates tried to prevent runners' corruption. To illustrate, the collection of tax by the runners was done for a period of time by the taxpayers handily placing the tax in locked boxes that the runners took to the magistrate who had the key to

<sup>46</sup> For simplicity of exposition we ignore the important role that the gentry played as intermediary between state officials and the clans.

<sup>47</sup> Runners had a term limit although in many cases they captured their positions and gained de-facto rights over them. See Ch'u, 1970, pp. 63–4 and Reed, 2000.

open these boxes. Yet runners often abused the posts. An inquiry of tax shortfall in the Jiangsu province in 1788 revealed that 41% was the result of corruption by the runners (Kiser and Tong, 1992, p. 318).<sup>48</sup>

#### 4.5.2. Market institutions

The comparative development of markets in China and Europe is puzzling if one ignores that their institutional foundations rest of distinct social organization of cooperation. On the one hand, the Chinese and European markets might have been similarly integrated as late as the 19th century.<sup>49</sup> On the other hand, European markets increasingly supported more impersonal exchange, particularly in financial markets. While credit and insurance instruments were widely used and traded in Europe from the late medieval period, this was not the case in China where the first credit institutions emerged in the 18th century.<sup>50</sup>

This distinction was known at least as early as 1851, when the English economist John Ramsay McCulloch noted that “credit is little known” in China (vol. 1, p. 628). In short, markets in China and Europe were similarly integrated but supported impersonal exchange to a different extent (Greif, 2005). The conjecture that cooperation in China and Europe was based on clans and corporations, however, provides a consistent explanation to both phenomena.

In Europe, corporations and generalized morality provided the social and cultural foundations for institutions that supported impersonal exchange since the late medieval period. One early institution motivated local public officials to dispense impartial justice to alien merchants.<sup>51</sup> This institution enabled a trader from one community to undertake contractual obligations toward a member of other communities even if their relations were not expected to repeat in the future even under limited information about past conduct and performance.<sup>52</sup> This institution, the Community Responsibility System (CRS), motivated the inherently biased local courts and other dispensers of justice to punish members of their communities who reneged on their inter-communal contractual obligations.

The CRS's basic mechanism was simple. If a member of one community reneged on his contractual obligation toward a member of another community, the cheated trader's community can impose a cost on the other community's members to motivate that community to punish the cheater and compensate for the damage.

The particularities of how this mechanism was implemented changed over time and regions but a common way was for courts to hold members of a different commune legally liable for every member's defaults on contracts with a member of the local commune. If the defaulter's communal court refused to compensate the injured party, the latter's communal court imposed cost on the defaulter's community by, for example, distraining the property of any member of the defaulter's commune present in its jurisdiction as compensation. A commune could avoid compensating for the default of one of its members only by ceasing to trade with the other commune. When this cost was too high, a commune court's best response was to dispense impartial justice to nonmembers who had been cheated by a member of the commune. Expecting ex post dispensation of impartial justice, traders were motivated to enter into impersonal, intercommunity exchange. Intercommunity impersonal exchange was possible, not despite the partiality of the court, but because of it; the court cared about the community's collective reputation (Greif, 2006a,b).

To illustrate the historical importance of the CRS, consider a charter granted to London in the early 1130s. King Henry I announced that “all debtors to the citizens of London discharge these debts, or prove in London that they do not owe them; and if they refuse either to pay or to come and make such proof, then the citizens to whom the debts are due may take pledges within the city either from the borough or from the village or from the county in which the debtor lives” (English Historical Documents, 1968, vol. II: 1012–3, see discussion by Stubbs, 1913).

This charter is representative; evidence from other charters, treaties, and regulations reveals that the CRS was the law of the land in England. Charters for English towns reveal that by 1256 cities that were home to 65 percent of the urban population had clauses in their charters allowing for and regulating “distrain” (impounding) of goods under the CRS. The centrality of the CRS in supporting English trade among members of various towns is also revealed in the surviving correspondence of the mayor of London for the years 1324–33. In this correspondence, 59 of the 139 letters dealing with economic issues (42 percent) explicitly mention community responsibility. They indicate that the mayor was motivated and expected the authorities of other towns to be motivated by the threat that all members of a community would be held liable if certain actions were not taken (Greif, 2006a,b). The CRS implied de-facto equality before the law. Similarly, equal legal treatment of out-of-town traders was generally mandated in European cities' and had a positive and significant impact on trade (Boerner and Quint, 2010).

The CRS took advantage of repeated inter-communal relations to support non-repeated relations among their constituting members. One would expect that a similar institution can, in principle, be used in inter-clan relations. This was indeed the

<sup>48</sup> Specifically, the corruption was by the runners and clerks (who were also low level local assistants of the magistrates). Local tax evasion by wealthy and powerful landowners accounted for about 55% of the total.

<sup>49</sup> Shiue and Keller (2007) recent analyses (e.g., Broadberry et al., 2014; Bernhofen et al., 2015) argued that Chinese market were either less integrated or disintegrated prior to the eve of the 19th century.

<sup>50</sup> Regarding Europe see Trenerry (1926); de Roover (1945), and Postan (1928). Regarding China see Kuroda (2013) and Mann and Kuhn (2008), p. 109.

<sup>51</sup> See Greif (2005, 2006a), and Greif (2006c). For other institutions, see, for example, Gelderblum (2011), Gelderblom (2013); Strum (2013), and Kessler (2007).

<sup>52</sup> The medieval commune has many attributes of a state (e.g., formal courts and ability to impose legal sanctions) but differed from the modern notion of the state in the sense that the incentives to the judges were provided by the commune and not by an exogenous state.

case with respect to various aspects of inter-clan relations. Clan regulations in general specified that “a clan should always watch its reputation by preventing its members from harming outsiders and by refusing its offenders clan protection” (Liu, 1959, pp. 152). At the same time, the moral obligation to kin seems to have limited the credibility and effectiveness of intra-clan punishment for inter-clan transgression. “The punishment of a member who misbehaves against a non-clan member is usually oral censure” while “the punishment for siding with outsiders in an aggression against fellow clan members is, however, much more severe... the group interest is placed higher than [inter-clan] community solidarity” (ibid.).

More generally, limited morality reduces the enforcement cost of intra-group relations relative to inter-group relations. Less inter-group relations, in turn, reduces the return from investing in legal enforcement and undermines alternative, reputation-based institutions such as the CRS that requires a sufficiently high present value of expected inter-group future relations. In contrast, under generalized morality the set of relations that have to rely on legal enforcement is the same in intra- and inter-group relations. Compared to the case of limited morality, generalized morality leads to more inter-group exchange relations (everything else being equal) and thus complements inter-group enforcement institutions.

It is reassuring to find that, consistent with this analysis, intra-clan commercial networks were important in long distance trade in China. In these networks, limited morality and institutions based on repeated interactions supported cooperation. To illustrate, “the sprawling merchant diasporas that managed 18th century interregional trade usually were built upon kinship ties. The huge shipments of rice ... were overseen by groups of Kiangsi merchants organized internally by lineage” (Rowe, 2002, pp. 531–2; Ma, 2004).<sup>53</sup> It is reasonable to postulate that intra-clan exchange reinforced limited morality. In fact, Chinese clans’ rules from the 20th century often state that “one must be very careful about” friendship with strangers (Liu, 1959, p. 148). About 95 percent of clan rule books call for care in selecting friends while only 8 percent call for “helping a friend in trouble” (ibid.).

The impact of limited morality on market institutions is reflected in their extensive reliance on personal relations. Investments specific to those relations compensated for the absence of generalized trusts. For example, clans from one locality cooperated to advance their common interests in other locations. Similarly, in the trading and late settlement frontiers in the North and Taiwan, temple-based associations were established as a means to substitute for the absence of strong clans. Investments in relations, and joining a particular group, fostered reputation mechanisms as a substitute for both general moral obligations and legal enforcement.

Advanced payment and guarantees were among the other institutionalized mechanisms widely used in China to facilitate trade among non-kin. “A trader in grain or goods conventionally made a large advance payment – sometimes as much as eighty percent of the agreed price – when placing the order. A later default in payment was therefore considerably less agonizing to the seller than otherwise it would have been. Disputes about the quality of what had been purchased rarely arose because, by commercial custom and private agreement, the purchaser was expected to inspect carefully and to decline acceptance of anything found to be unsatisfactory. If acceptance did occur, the buyer was barred from later complaining that he had not received what he had been promised” (Gellhorn, 1987, p. 3). Despite these measures, however, market expansion was limited. “Despite China’s expanse, trade was largely local, the disputants lived in the next lane, the brother of one of them had married a sister of the other, and neighborly mediation was readily accepted because, after all, everyone involved in the controversy was going to have to go on living with everyone else after the present disagreement had been smoothed over” (Gellhorn, 1987, p. 3).

#### 4.5.3. General lessons

Summarizing, state and market institutions in China and Europe differed in a manner consistent with the conjecture that distinct social organizations and moralities prevailed in each region. Legal enforcement in Europe shifted to the state as is implied by our conjecture. Lower migration cost due to generalized morality, inter-corporation mobility, and stronger states undermined the enforcement capacity of territorially small corporations. The enforcement of the law became the domain of the state. In China, by contrast, clannishness limited mobility, rendering local enforcement more effective and the state responded by relinquishing interpersonal legal matters to the clans.<sup>54</sup>

The importance of personal relations in supporting cooperation is also evident from the creation of fictional kinship groups. The clan of Li in Wenchuan (mentioned in Section 2) provides an example of what Zhenman called a contractual clan. Everyone who shared the clan’s surname could have bought a share (when offered to finance clan-specific local public or local goods) in return to proportional amount of prayers for the souls of his ancestors. When cooperation with kin was insufficient, the boundaries of the group was extended to individuals who were ‘closer’ to kin than others, and particularly to those with close place of residence or origin. As one had to move further away from kin-like relations, more assertive means were used to create kin-like relations. These means included adopting an adult, adopting the same surname, developing a myth of common origin, creating a clan-trust, etc.. Personal, clan-like relations, whether real or imaginary, were considered essential for cooperation.

Similarly, the distinct moralities in China and Europe shaped the relationship between the state and its local administrators. Our conjecture implies that whereas in China the local administrators were acting against the prevailing morality, in

<sup>53</sup> For morality in overseas Chinese trading networks see, e.g., Landa (1981), Pyatt and Redding (2000), and Redding (1993).

<sup>54</sup> Anthologists have long noticed such trajectories of cooperation when impersonal legal enforcement is weak. The Landa (1981) has employed this framework to examine the organization and functions of Chinese traders operating outside of China.

Period written	No.	%	East	North	North East	North West	South East	South Central
Pre 1644	596	1.19	558	6	0	4	0	28
1644 - 1911	18,845	37.51	13,443	275	262	128	415	4,322
1912-1949	14,306	28.47	8,927	189	97	61	479	4,553
1949-1979	2,996	5.96	2,642	9	10	24	25	286
1980-2005	10,647	21.19	6,998	101	188	142	495	2,723
Missing	1,814	3.61	1,273	24	42	21	62	392
Total	50,244	100	34,810	605	602	386	1,486	12,355

Source: The genealogy database with repetition.

Fig. 10. Genealogies by Period and Region, 1644–2005.

Europe they were enforcing the prevailing morality. Indeed, the legal definitions and institutions governing the relations between the state and its administrators correspondingly differed. Finally, market development in China and Europe transpired along trajectories implied by distinct social organization of cooperation (and see Greif, 1994, 2006a).

The distinct state and market institutions in China and Europe probably reinforced their different underlying social organizations. The delegation of legal enforcement to the clans, for example, fostered interactions among clan members and hindered interactions with non-members. Similarly, the institutional limitations on local administrators in China implied that they had little to lose by being corrupt, which in turn reinforced limited morality.

## 5. Persistence of kinship ties in modern china

Overtime the attitude of the Chinese state towards clans changed particularly due to the realization of the higher institutional effectiveness in the West. Rather than relying clans for local public good provision, the state began to seek alternatives. Hostility towards clans was explicit during the modernization movement in the early 20th century, when clans were viewed as an obstacle to economic development. But things got much worse when the communist regime gained power in 1949: clans were officially abolished, their properties were confiscated, elders lost their legal privileges and authority, clan legal codes were no longer recognized, and the ideology of class consciousness was promoted (e.g., Huang, 1985, p. 308).<sup>55</sup> Had the clans been a product of the state, they would not have survived the crackdown. This is not what happened, however. When the state stopped actively persecuting them in 1979, clans re-emerged, consistently with the idea that clans coevolved with deeply held moral convictions. We now document the re-emergence of clans and the persistence of cultural traits in modern China.

### 5.1. The re-emergence of clans in China

The dates in which the genealogies were published provides a first indicator of the reemergence of clans in post Maoist China. The genealogy database provides some dating information for about 96% of the observations. As can be expected, only a few genealogies were initially written under communism. Specifically, between 1949 (when the Republican forces were defeated) to 1979 (when the market reforms began) only 2996 genealogies were published. More informative is that 2092 (60%) of these were published in Taiwan to which the republican forces retreated. In fact, more genealogies were published in Taiwan between 1949 and 1979 than we have records for since the Ming came to power in 1368. The Chinese version of Republicanism was more clannish than the European one in which it is associated with individualism.

In mainland China, the publication of genealogies resumed after 1979 (Fig. 10). Out of the 46,794 post 1644 genealogies 10,647 (22%) were published between 1979 and 2005, about 4390 genealogies per-year. The selection bias favoring post-1979 genealogies notwithstanding, this is more genealogies per-year than during the Qing dynasty (70) and the Republican period (377). Also telling is that even after the collapse of the Empire in 1911, genealogies continued to be published. Whatever role the Empire played in the diffusion of clans, by 1911 the perpetuation of the clans did not rely on this role.

The post-1979 re-emergence of clans is particularly noteworthy given that the reforms were not designed to foster clan organizations. Households, and not clans, were given land-use rights in the former collective farms and privately-owned businesses were permitted. Yet, kin-based and relations-based exclusive organizations have re-emerged and resumed their traditional role in supporting cooperation.

<sup>55</sup> Yet some policies under communism actually strengthened limited morality. Among these policies were legal restrictions on geographical mobility, collectivization, and the delineation of village boundaries (e.g., Huang, 1985).

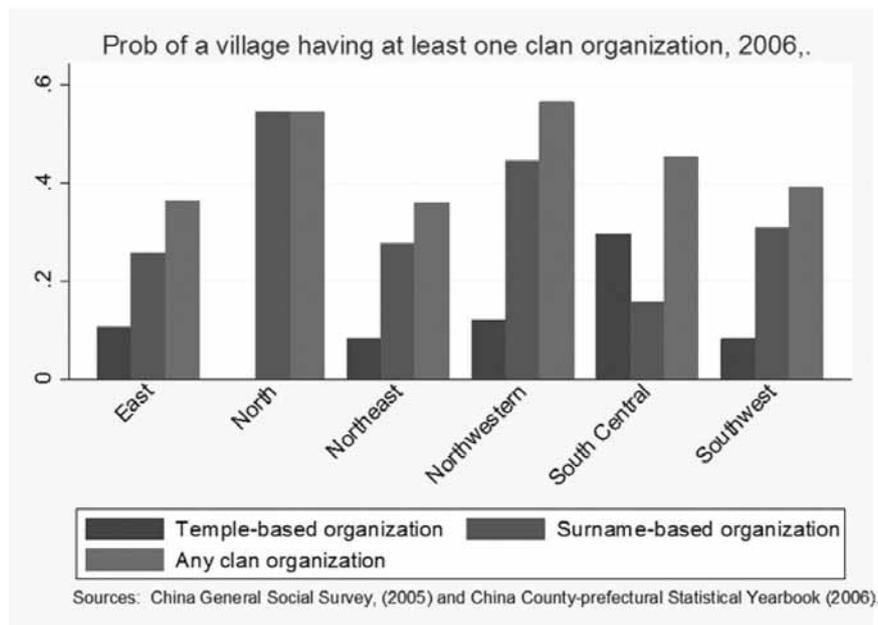


Fig. 11. Clan organizations in rural China, 2006.

One may wonder if the publications of the genealogies reveals no more than the common curiosity about family history. This is not the case, however. Clans still matter. To illustrate, a county-level survey in 2000 (by Liangqun and Murphy, 2006, in Jiangxi) documents that 70 surnames out of 99 (in 40 villages) updated their genealogies since 1981 and 41 surnames invested in their ancestral shrines since 1991 (p. 230). A 2002 representative national survey of more than 300 villages reveals lineage activities and kinship organizations in 66 percent of the villages (Tsai, 2007, pp. 154–7). Clans resumed their role in securing property rights from predation by officials, organizing weddings and funerals, providing welfare, contributing to public projects, and promoting mutual aid arrangements (ibid.). Inter-clan conflicts also resumed and collectively owned rural firms often formally exclude non-locals (Thøgersen, 2002). About 90 percent of the 887 households that migrated to or from one of 50 villages relocated to their ‘ancestral village’ and 60 percent relocated due to inter-lineage tension (Liangqun and Murphy, 2006, p. 623).

As a second indicator of clan persistence, we study a random sample of 76 counties, 205 villages and 4274 individuals from China General Social Survey (2005), (GSS05). The GSS05 asks (only) rural residents whether there is a clan organization in their community. Although under-reporting of clan organizations is likely given the tradition of suppression by the communist authorities, the census reveals 277 clan-based organizations. A clan organization almost always (90 percent) has a genealogy, a graveyard, or both. On average there is 1.35 clan organization per-village and one organization per 15.5 respondents. Almost 70 percent of the population live in a county with positive sample probability of a village having an organization, and in 41 percent of the counties the village-probability of having a clan organization is at least 50 percent. The survey also asks whether the clan is a surname-based or temple-based organization.<sup>56</sup> The two types differ in their assets such as land, estates (other than ancestral hall), and trust funds. Only 26 percent of the surname-based network have such an asset, compared to 78 percent of the temple-based organizations. Clan organizations currently exist in each of China’s six regions although there are no temple-based clan organizations in the north (Fig. 11). Contemporary clans (and temple based clans) are particularly frequent in the south-central region and, specifically, in Guangdong, the richest province. This geographic pattern is consistent with the history of the rise of clans associated with out-migration from the North, as described in Section 4.1.

The majority of clans mentioned in the survey fulfill functions such as resolving private disputes within the village, providing local public goods and economic assistance, and handling inter-village relations. This is confirmed by other sources, that describe how clans secure property rights (also preventing abuse from local officials), organize weddings and funerals, provide welfare, contribute to public projects (e.g., road’s construction), and promote mutual aid arrangements. For example, in River county (Jiangxi) descent groups re-grouped to protect land-user rights (Liangqun and Murphy, 2006, p. 632) and village-wide lineage groups are significantly correlated with the provision of public goods and with how public officials are held accountable (Tsai, 2007). There is also a strong and significant correlation of village-level kinship with the number of private enterprises and the labor force (Peng, 2004).<sup>57</sup>

<sup>56</sup> F10. ‘Is there any clan network or organization in your community/village? 1 None. 2 There are kinship network bounded by family name, but no formal organization. 3 There are clan organization centered around clan temple activities.’

<sup>57</sup> Data from 366 villages in 22 counties. The effect is smaller including self-employed but significant; 7% increase per 10% increase in the proportion of the largest group.

Chinese scholars have noted the important role of kin and kin-like relations in the success of market reforms. China's formal institutions are well known to be weak and do not adequately secure private property rights or enforce contracts; clans filled this vacuum and partly fulfilled these functions, as they had done in the past.<sup>58</sup> Prior to 2007 all property in China was *de jure* owned by the state and there was no law recognizing and regulating private property rights.<sup>59</sup> There was no dedicated contract law prior to 1981 and only in 1999, a Uniform Contract Law had been formulated. As noted by (Li (2009), p. 20), this law, which is still in force, is ineffective because it is ambiguous, ill specified, and lacks a proper case notes. Moreover, the legal system is subservient to the interest of the state. The inadequacy of China's formal institutions manifests itself in the widespread reliance on political actors (e.g., party cadres) in business enterprises (e.g., Nee, 1992) and the evidence suggests that 'buying' political protection in this manner is costly.<sup>60</sup> This weakness of the state left room for the proliferation of social organizations based on relationships and affinity such as *guanxi* (relations; e.g., Thøgersen, 2002, p. 261) and clan-like organizations.<sup>61</sup> *Guanxi* in turn reflects and reinforces limited morality, through the services it provides to individuals in their economic activity. To illustrate, job assignment in the 1980s was formally based on meritocracy. Yet, in a representative sample of 1008 households in the city of Tianjin (1988), 57 percent reported that they got their jobs (1977–1988) based on personal connections (*guanxi*) and 43.3 percent of those who assisted them were relatives (Bian, 1994). In this way, the mutual reinforcement between kin based organizations and loyalty to kin is preserved in modern China.

## 5.2. Cultural persistence

The strength of kinship ties in contemporary China is reflected in trust attitudes. In China “you trust your family absolutely, your friends and acquaintances to the degree that mutual dependence has been established ... With everybody else you make no assumptions about their good will” (Redding, 1993, p. 66).<sup>62</sup> The 2005 China General Social Survey asked villagers how much they trust a villager with the same surname versus a villager with another surname (qf14). An unconditional mean comparison test of the resulting 4228 responses in random sample of 76 counties reveals a statistically significant lower trust (at the 1 percent level) in villagers of different surname.

To overcome the difficulty of comparing attitudes across countries, where the same question can have different interpretations, we collected data on the attitudes of Chinese versus European immigrants to Canada, exploiting the 2005 Ethnic Diversity Survey. We restrict attention to immigrants of second generation or higher. These are individuals born in Canada, and who report their ethnic ancestry.

We focus on trust towards different reference groups, exploiting a question that asks “How much do you trust each of the following groups: people in your family / people that you work with / people in your neighborhood?”. The answer can vary from 1 (not at all) to 5 (a lot). We also compare trust attitudes in general, with the usual question on trust towards people in general (“Generally speaking would you say that most people can be trusted or that you cannot be too careful in dealing with people?”, with a binary answer (1 if people can be trusted, 0 otherwise). Compared to European immigrants, we expect Chinese immigrants to display more trust in people who are closer (such as family members), and less trust in people who are more distant (such as in the general trust question). More generally, as familiarity or closeness decreases, we expect trust to decline more steeply for Chinese immigrants compared to European immigrants.

Fig. 12 reports the estimates for the different trust attitudes. Estimation is by OLS for trust in family members, colleagues and neighbors, and by Probit for general trusts (marginal effects are reported). Thus, the coefficient estimates are strictly comparable only for the first three measures of trust, and not for general trust. The dummy variable *Chinese vs. European* takes a value of 1 for Chinese ancestry, and 0 for ancestry in Northern and Central Europe. It is coded as missing for ancestry from other parts of the world.<sup>63</sup> Throughout we also control for individual education, age, income, gender, and other observable individual features (see the Notes to Fig. 12). As shown in Panel A of Fig. 12, Chinese and European immigrants have similar levels of trust towards family members and colleagues at work (columns 1 and 2). When it comes to trust towards neighbors or people in general, however, Chinese immigrants are significantly less trusting than European immigrants (columns 3 and 4).

Could these results reflect the possibility that Chinese immigrants find it more difficult to fully integrate in a Western society, because of their different ethnic traits? To address this concern, Panel B of Fig. 12 adds a regressor that controls for whether the respondent ever felt uncomfortable up until the age of 15 because of his /her ethnic identity (the variable *uneasy*). With this specification, the results are unchanged or even stronger. Chinese immigrants have relatively more trust in family members compared to European immigrants. This difference remains positive but it loses significance with respect to colleagues, and it becomes negative and statistically significant when turning to neighbors and to general trust. Altogether, these results confirm that the different cultural traditions of China and the West continue to shape attitudes today.

<sup>58</sup> E.g., Nee (1992) and Whyte (1995, 1996).

<sup>59</sup> E.g., Zhang (2008); Yet, article 11 of the 1988 constitutional amendment permitted private enterprises.

<sup>60</sup> E.g., Bai et al. (2006); Lu and Tao. (2010); Su and He (2010), Li et al. (2008); Lu and Tao. (2010); Thøgersen (2002).

<sup>61</sup> Regarding fictional clans in Late Imperial China, see Rowe (2002), pp. 355–7.

<sup>62</sup> Chinese overseas businessmen perceive Westerners as more contractually reliable. A survey of Chinese businessmen in Thailand and Hong-Kong (1994–5) finds that “Westerners are considered [by the Chinese] to be attractive partners for ... their respect for the law and keeping of promises. Trustworthiness is a frequently mentioned trading attribute of non-Asians” (Pyatt and Redding, 2000, p. 59).

<sup>63</sup> Thus, immigrants from Southern Europe (Italy, Spain, Greece, and Portugal) are excluded from the comparison, because trust is traditionally low in this part of Europe—indeed the term *amoral familism* was introduced by Banfield (1967) precisely in his analysis of Southern Italy.

Dependent Variable Estimation technique	(1) <i>Trust family</i> OLS	(2) <i>Trust colleagues</i> OLS	(3) <i>Trust neighbors</i> OLS	(4) <i>General Trust</i> Probit
<b>PANEL A</b>				
<i>Chinese vs European</i>	-0.002 (0.022)	-0.055 (0.038)	-0.220*** (0.039)	-0.060*** (0.021)
Observations	17,352	14,677	17,278	17,207
R2	0.015	0.049	0.102	0.026
<b>PANEL B</b>				
<i>Chinese vs European</i>	0.055** (0.023)	0.050 (0.039)	-0.125*** (0.039)	-0.045** (0.021)
<i>Uneasy</i>	-0.073*** (0.008)	-0.137*** (0.012)	-0.122*** (0.011)	-0.019*** (0.006)
Observations	17,325	14,662	17,252	17,182
R2	0.024	0.059	0.109	0.027

Robust standard errors in parenthesis: \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%  
Column (4) reports marginal effects and Pseudo R-squared.

**Fig. 12.** Trust attitudes: Chinese vs European immigrants.

## 6. Concluding remarks

Positive feedbacks amplified different initial conditions that prevailed in Europe and China over a millennium ago. In China, clans became the locus of cooperation among kin motivated by reciprocal moral obligations and personal interactions. In Europe, corporations became the locus of cooperation among non-kin motivated by generalized morality and legal enforcement. These social organizations influenced the institutional foundations of markets, the provision of social safety nets, legal development, and the organization of the state. These effects persist today.

Persistence, however, does not mean stasis and both systems were successful in adapting to change. Yet their dynamics differed due to the complementarity between their different constituent elements.<sup>64</sup> For example, the Europeans responded to the technologically driven increase in economies of scale by relying on the law and generalized morality to separate ownership and control of corporations. In China, kinship organizations were supplemented by “more flexible, selective, and contingent networks that include other kin and relatives” (Thøgersen, 2002, pp. 267). Thus, the European system has a comparative advantage in supporting impersonal exchange, while the Chinese system has a comparative advantage in economic activities in which personal relations are more important. Their relative efficiency is generally unclear, as each system has advantages and drawbacks.<sup>65</sup>

We have only scratched the surface of a rich research program, and many questions remain to be addressed. Three issues in particular are highlighted by the preceding analysis and deserve more attention. First is the question of how these different social and cultural heritages influenced specific economic and political outcomes and the pattern of economic development in Europe and China. For instance, Europe’s transition to a modern economy and its successful post World War II reconstruction benefited from its social welfare systems rooted in generalized morality and legal institutions. However, the subsequent dynamic of the welfare state led to entitlement programs that, in some European states, are fiscally unsustainable. In contrast, post-reform China experienced rapid economic growth, despite weak legal institutions, because its traditions foster individual profit-seeking on the one hand, and relations-based institutions for enforcement and public good provision on the other. Yet, limited morality and institutions based on personal relations also lead to potentially destructive inequality, corruption, and social tensions. We plan to explore these issues in a follow-up project.

Second is the issue of state formation. We have stressed how the modern state was built incorporating and exploiting elements of the underlying social organizations. Exploring more in detail how this happened, at critical historical junctures and with regard to specific institutions, can shed light on the functioning of state institutions, on their cultural and social prerequisites, and on why institutional transfer can fail if these historical prerequisites are missing.

The third general issue concerns the importance of endogenous social organization and their formation in situations of social conflict. Most of political economics takes the social groups as primitive entities, defined by common economic interests, and then studies which groups are politically more influential in lobbying, or at the elections, or in shaping the evolution of political institutions. This is unsatisfactory, because it neglects the collective action problem faced by any group. In our analysis, social organizations are endogenous, and group formation reflects both external incentives and group loyalty.

<sup>64</sup> See the discussion in Greif (2006a) on institutional dynamics as a historical process.

<sup>65</sup> For a similar observation regarding Europe and the Middle East, see Greif (1994, 2006a).

We have refrained from studying situations of social conflict, however, where different groups compete for influence or power. Extending our approach to study social conflict can provide fruitful insights about how social groups shape political outcomes and political institutions.

## Supplementary material

Supplementary material associated with this article can be found, in the online version, at [10.1016/j.jce.2016.12.003](https://doi.org/10.1016/j.jce.2016.12.003).

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