Stem Families and Joint Families in Comparative Historical Perspective

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FOR THE PAST four decades, historical demographers have argued that historic Northwest Europe and North America had a unique family system characterized by neolocal marriage and nuclear family structure (e.g., Laslett 1972; Hajnal 1982; Hareven 1994; Reher 1998). In a recent article (Ruggles 2009), I argued that there is little evidence to support this interpretation. I presented a comparative analysis of the living arrangements of elderly populations observed in 84 historical and contemporary censuses of 35 countries. With simple controls for agricultural employment and demographic structure, I found no significant differences in family structure between nineteenth-century Northwest Europe and North America and twentieth-century developing countries. The article concluded that the data show no sign of a distinctive Northwest European family system.

In that article, I focused on three measures of the living arrangements of individuals and couples aged 65 or older: (1) the percent residing with any kin, other than a spouse; (2) the percent residing with children or grandchildren; and (3) the percent residing with both children and grandchildren—that is, in a three-generation household. This note extends the analysis by exploring two new measures of living arrangements designed to detect stem families and joint families. (See definitions below.) I assess the spatiotemporal distribution of these two new family indicators across 100 samples drawn from countries around the world since the mid-twentieth century and from Western Europe and North America since the mid-nineteenth century. The results for stem families are consistent with the previous study: Western Europe and North America appear similar to other countries that shared the same levels of agricultural employment and similar demographic conditions. The spatial distribution of joint families, however, is very different. The results suggest that Europeans and North

Americans have had a long-standing aversion to joint family living arrangements, and that this pattern cannot be easily ascribed to demographic and economic conditions.

Stem families and joint families

Formal spatiotemporal analysis of family types began with Frédéric Le Play's massive empirical studies in the mid-nineteenth century, which set the terms of theoretical debates that persist today (Le Play 1855, 1884). Le Play wrote that there were three basic types of families in all parts of the world and all ages of history. What he called the *famille patriarcale*—now termed the joint family—was one in which all sons remained with or near their parents upon reaching adulthood, and worked together on the family farm. Eventually, when the family got too large to support on a single farm it would split apart, with some sons receiving movable property such as livestock. Le Play said that patriarchal families could be found among "Eastern Nomads, Russian Peasants, and the Slavs of Central Europe" (Silver 1982: 259).

Le Play's second family type was the *famille souche* or stem family. In stem families, according to Le Play's definition, the father selected one child to remain near the parental homestead to work on the farm and eventually inherit it, thus continuing the family line. All other children left the parental family to form their own nuclear households. Le Play argued that the stem family was the dominant form of peasant household in most parts of Europe.

Le Play deplored the rise of the third type, the *famille instable*—now called the nuclear family—and said it was beginning to take over "among the working class populations subject to the new manufacturing system of Western Europe" (Silver 1982: 260). With commercial and industrial growth in the nineteenth century, fewer families had property to hand down, so nuclear families became common. In these families, all the children left home at an early age and established their own households. Elderly parents were left to fend for themselves, and upon their deaths the family was extinguished.

Charles Devas (1886) expanded on Le Play's work, offering an in-depth comparative treatment of joint families around the world. Devas maintained that joint families were common in China and India and had formerly been found in Russia, the Balkans, and parts of Central Italy. But in places like "modern France or England or North America," Devas maintained, the diminished "power of the father over his children" had led to "rapid dissolution" of the joint family (Devas 1886: 44, 211).

An extensive anthropological and demographic literature has concurred with Devas's generalizations about the spatiotemporal distribution of joint families (Wheaton 1975). Many studies of Asian families, especially in India and China, argue that the joint family has been a defining characteristic of

those societies (Goldschmidt and Kunkel 1971; Chandrasekhar 1943; Cohen 1976, 1992; Shah 1998; Wolf 1985). Scholars have also pointed to the cultural significance of joint families in Russia (Czap 1978, 1982), Southeastern Europe (Halpern 1972; Hammel 1972; Kaser 1994), and parts of Italy (Kertzer 1989; Douglass 1991).

The spatiotemporal distribution of stem families has also generated a significant literature. Much of this work is concerned with refining the boundaries of the Northwest European nuclear family region identified by Laslett and Hajnal (e.g., Kaser 2002; Plakans and Wetherell 2005; Szoltysek 2009). Other investigators question the basic premise that stem families were absent from Northwest Europe and North America. Although mainstream demographers and historians were persuaded by the arguments of Laslett and Hajnal that neolocal marriage and nuclear family structure had always prevailed throughout Northwest Europe and North America, not all scholars have agreed. Dissenters have presented evidence of stem families in nineteenth-century Austria (Berkner 1972; Brown 2009; Ehmer 2009), England (Ruggles 1987), Ireland (Gibbon and Curtin 1978), Finland (Moring 2009), France (Fauve-Chamoux 1984, 2009), Norway (Sogner 2009), and the United States (Ruggles 1994).

This note aims to shed light on the debates about stem families and joint families by examining evidence from nineteenth-century Western European and North American censuses in the context of data from the more recent past. By using measures designed to detect the two key family forms that have been the focus of so much theory and debate, I hope to contribute to our understanding of family systems and development.

Data and measures

The analysis relies on the same three data collections as the original article (Ruggles 2009): the North Atlantic Population Project (2008), IPUMS-International (Minnesota Population Center 2009), and IPUMS-USA (Ruggles et al. 2009). Because of new data releases, however, the number of microdata samples that can be used in the analysis has gone up from 84 to 100. Following the same criteria as in the previous article, I used every sample in the three collections that provided adequate information on family interrelationships and agricultural employment and was available as of May 2010. The new additions are Armenia in 2001, three samples of Bolivia from 1976 to 2001, England and Wales in 1851, Guinea in 1996, four samples of India from 1983 to 1999, Italy in 2001, Jordan in 2004, Kyrgyz Republic in 1999, Mongolia in 2000, Scotland in 1851, and Slovenia in 2002.

Although there has been some variation in the definitions (Madan 1962), most anthropologists and historians distinguish joint, stem, and nuclear families according to the number of children who remain in the parental

home after marriage. In joint families, more than one child remains in the parental household after marriage. A joint family system is thereby distinguished from a nuclear family system—under which all children leave home when they marry—and a stem family system—in which one child remains in the parental home after marriage (Wheaton 1975; Kertzer 1989).

As in Ruggles (2009), I assess living arrangements from the perspective of individuals or married couples aged 65 or older, mainly because such measurement simplifies the problem of accounting for the influence of demographic conditions on the availability of kin for coresidence.[1] The analysis focuses on residence of the elderly in multigenerational families, defined here as families with a member aged 65 or older residing with a married child or grandchild. I subdivide multigenerational families into two types, termed stem families and joint families, which I define as follows:

Stem families are multigenerational families with no more than one married child.

Joint families are multigenerational families with two or more married children.

These measures are approximations of Le Play's concepts of stem family and joint family. There are three main potential sources of measurement error. First, stem families and joint families may be missed because a child has not yet married. Because the analysis focuses on individuals and couples aged 65 or older, however, these errors should be relatively rare: even in late-marrying societies, most people marry before their parents reach age 65. Second, elderly persons who move in with a married child for old-age support will be classified in the stem family category, even though there may be no transmission of property to the designated heir. This mechanism of multigenerational family formation is conceptually different from Le Play's model of stem families, and in some populations represents a substantial proportion of intergenerational coresidence.[2] Third, these measures of stem family and joint family are limited to persons coresiding in the same household. Under Le Play's definitions, both stem families and joint families could have the younger generation residing *near* the parents. Thus, for example, across much of Europe elderly farmers with sufficient means sometimes moved into a separate house on the family property when they retired; and even when the generations shared the same physical structure, they were sometimes enumerated as separate households (Berkner 1972; Moring 2003; Sogner 2009). These kinds of stem families would be missed by the measures used here. Despite these qualifications, these measures of stem families and joint families offer the advantages of simplicity and easy replicability across many datasets, and they are probably the best approximation of Le Play's definitions feasible with the available data.

Following the procedures described in Ruggles (2009), I construct simple controls to account for regional and temporal variations in demographic

TABLE 1 Control variables

Name	Description	Mean	Std. dev.
Agricultural employment	Log of percent of men aged 18–64 employed in agriculture	2.8	0.9
Percent elderly	Percent of population aged 65 or older	7.3	4.1
Marital fertility	Age-standardized marital fertility ratio[a]	63.4	20.9
Female marriage	Female singulate mean age at marriage	23.4	2.1
Male marriage	Male singulate mean age at marriage	26.4	1.8
Nonmarriage	Percent never married at ages 45–54 (both sexes)	8.0	4.1
Unmarried elderly women	Percent of population 65+ who are women without spouses	44.8	4.3
Elderly couples	Percent of population 65+ who are residing with spouse	38.2	5.3
De jure census	De jure census enumeration rule	0.5	0.5

[a]Age-standardized number of own-children under age five years per 100 married women aged 15–49.

conditions and economic development. These are described in Table 1. Most of the control variables—agricultural employment, percent elderly, marital fertility, unmarried elderly women, elderly couples, and de jure census—are identical to the control variables used in the previous article, and the detailed descriptions and rationale for each variable are documented there. Because of the definitional importance of marriage behavior to stem family and joint family formation, I added three measures of marriage patterns. I include measures of both male and female marriage age because they have distinctly different effects. These measures are calculated using Hajnal's (1953) singulate mean age at marriage. I also assess nonmarriage, since it directly determines the population at risk of residence in a stem family or joint family. Nonmarriage is measured as the percentage of persons aged 45–54 who have never married.

Results

Table 2 summarizes regional variations for the two measures of living arrangements. The average percent of elderly in stem families is shown in the left column. The data indicate that in the twentieth century the raw percentage of stem families was lowest in Western Europe and the United States. The nineteenth-century samples from Great Britain, the Nordic countries, and North America fell between these extremes.

The right column of Table 2 shows the percent of elderly individuals residing in joint families. The percent of elderly individuals in joint families is far lower than the percent in stem families in every region. This doubtless partly

TABLE 2 Measures of living arrangements of individuals and couples aged 65 or older

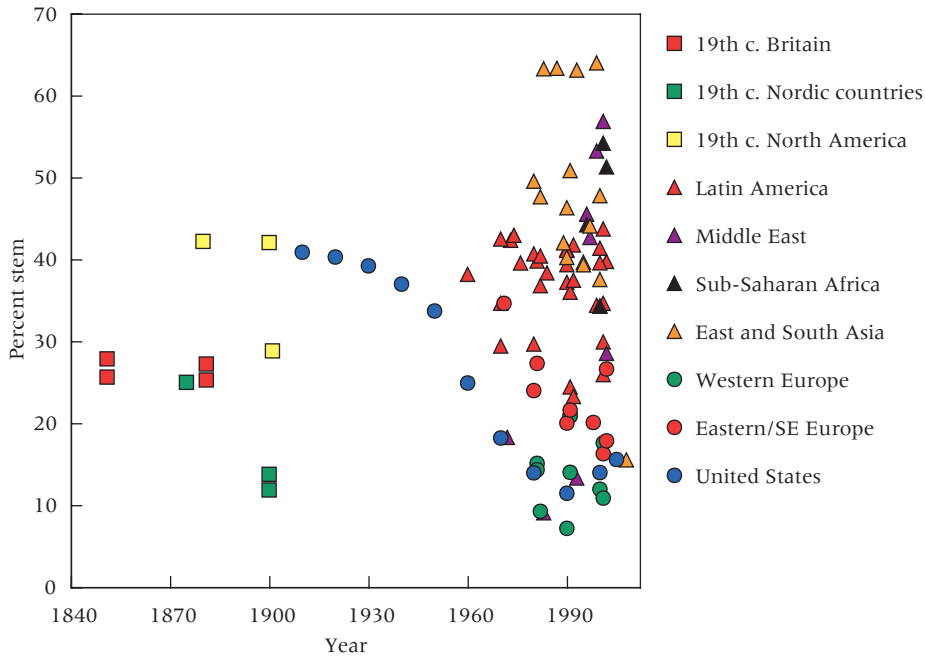
	Percent residing in	
	Stem family	**Joint family**
Nineteenth century		
Britain	26.8	0.3
Nordic countries	17.1	0.2
North America	38.0	0.6
Twentieth and twenty-first centuries		
Latin America	37.1	2.0
Middle East	33.7	4.8
Sub-Saharan Africa	45.0	3.7
East and South Asia	50.2	6.2
Western Europe	14.5	0.2
Eastern/Southeastern Europe	23.7	1.8
United States	26.5	0.5
Overall mean	33.4	2.4
Standard deviation	13.6	3.4
Number of census samples	100	100

reflects demographic constraints: many elderly do not have multiple married children. Under the classic ideal of the joint family (Chandrasekhar 1943), it is only the sons who remain in the parental household after marriage, and this further constrains demographic opportunities to reside in a joint family.

There are considerably sharper regional distinctions in joint families than in stem families. In Western Europe and North America joint families were exceedingly rare both in the nineteenth-century samples and in the more recent ones. The highest percentages of joint families are found in East and South Asia, followed by the Middle East and sub-Saharan Africa. The joint family pattern was also comparatively common in the Middle East and sub-Saharan Africa.[3]

Figures 1 and 2 provide a visual representation of these spatiotemporal patterns. The samples from Europe and North America between 1850 and 1901 are indicated by squares, and the more recent samples from those regions are identified by circles. Data from developing countries, all of which date to the period since 1960, are identified by triangles. The stem distribution shown in Figure 1 is similar to the spatiotemporal patterns for other measures of family complexity shown by Ruggles (2009). Stem families are most common in developing countries and have been comparatively rare in most developed countries during the past 50 years. The observations from nineteenth-century Europe and North America generally fall in the middle range. Joint families, shown in Figure 2, show a dramatically different pattern. Joint families are rare in all samples from Western Europe and North

FIGURE 1 Percent of elderly in stem families by census year and region

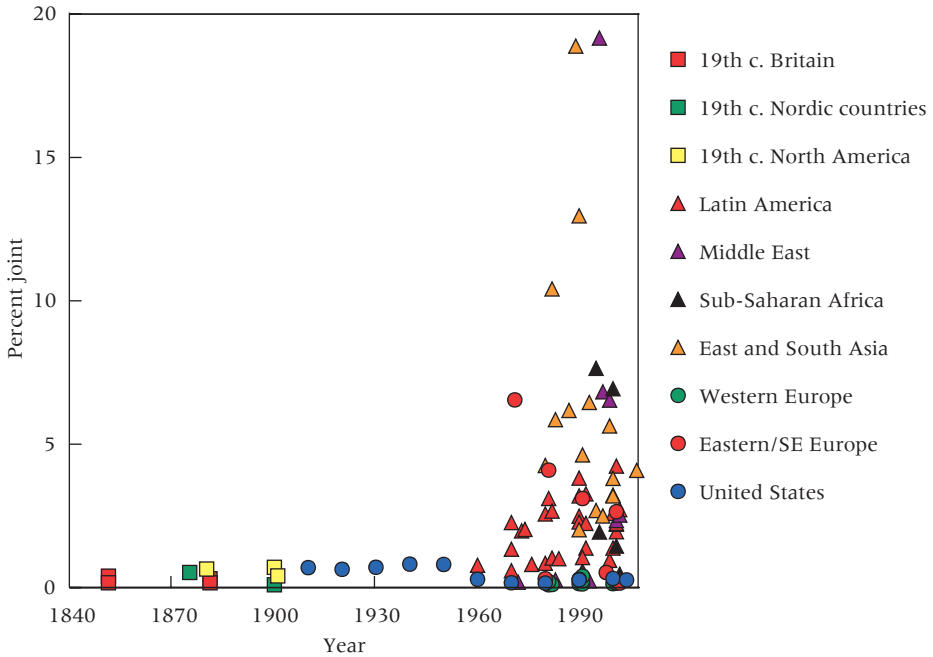


America, regardless of period, and with the exception of four samples from Greece they are not found in Eastern or Southern Europe either.

Table 3 drills down to identify the figures for each specific sample, sorted in ascending order according to the percentage of elderly individuals and couples residing in joint families. The Western European and North American samples are indicated in bold, and the nineteenth-century samples from those regions are in bold italics. For these regions, every sample in every period has under 1 percent joint families. The same was true, however, for almost every sample from Eastern Europe, as well as the samples for Argentina, Brazil, and Israel. The only European country with a higher percentage of joint families was Greece, and those figures have been declining rapidly over the past four decades. Other than Greece, the highest incidence of residence in joint families occurred across Asia (Iraq, Vietnam, China, Palestine, Kyrgyz Republic, India) and West Africa (Guinea, Ghana).

Are these regional patterns merely an artifact of variation in demographic and economic composition? Table 4 gives the results of ordinary least squares regressions. The goal of the analysis is to control for variation in demographic conditions and agricultural employment on residence with kin, in order to better understand spatiotemporal variations in living arrangements. The regression model can yield predicted coresidence in each sample, and by comparing the predicted to the actual living arrangements in each country

FIGURE 2 Percent of elderly in joint families by census year and region



we can identify censuses and regions that have higher or lower coresidence than predicted.

Unsurprisingly, the results shown for stem families in Table 4 are very close to the results reported for three-generation families in Ruggles (2009). The control variables account for most of the variation in stem families across countries. Indeed, just two basic measures—the log of the percent of working-age men engaged in agriculture and the percent of the population aged 65 or older—by themselves can account for about 60 percent of the variation across countries in the percentage of stem families. The marriage age variables, not included in the previous analysis, also have significant effects. Female age at marriage is inversely associated with stem family residence, which makes sense because low female age at marriage reduces the age difference between generations and increases the potential for intergenerational coresidence. Male age at marriage, however, is positively associated with the stem family measure. Late marriage for men—in particular, marriage of older men to younger women—is often found in patriarchal societies that have patrilineal kinship organization, and such structures in turn seem to be positively associated with intergenerational coresidence (Casterline, Williams, and McDonald 1986; Martin 1990).

The regression model of residence in joint families is substantially weaker than the stem family model. The only variables significantly associated with

TABLE 3 Census samples sorted by percent of joint families among elderly individuals and couples

Country and year	Joint	Stem	Country and year	Joint	Stem
Sweden 1900	0.0	12.1	Chile 1970	1.3	34.9
Austria 1981	0.1	15.4	Costa Rica 2000	1.4	34.6
Norway 1900	0.1	14.0	Bolivia 1992	1.4	23.5
France 1982	0.1	9.5	South Africa 2001	1.4	54.4
Austria 1991	0.1	14.3	South Africa 1996	1.9	44.5
Austria 2001	0.1	12.2	Chile 2002	1.9	34.9
France 1990	0.1	7.4	Colombia 1973	2.0	42.6
Slovenia 2002	0.1	18.1	Philippines 1990	2.0	40.5
Italy 2001	0.1	11.1	Ecuador 1974	2.0	43.2
United States 1980	0.1	14.2	Bolivia 2001	2.2	26.2
United States 1970	0.2	18.5	Ecuador 2001	2.2	30.2
Scotland 1881	0.2	27.5	Chile 1992	2.2	37.7
Scotland 1851	0.2	28.1	Panama 1970	2.3	42.7
Israel 1972	0.2	18.5	Mexico 1990	2.3	37.5
Portugal 1981	0.2	14.6	Armenia 2001	2.3	57.1
Romania 1992	0.2	26.9	Ecuador 1990	2.5	39.6
Portugal 1991	0.2	21.2	Cambodia 1998	2.5	44.3
Israel 1995	0.2	13.6	Jordan 2004	2.5	28.8
Portugal 2001	0.3	17.8	Panama 1980	2.6	40.9
United States 2007	0.3	15.8	Mexico 2000	2.6	39.8
United States 1990	0.3	11.7	Greece 2001	2.6	16.5
Israel 1983	0.3	9.3	Ecuador 1982	2.7	40.7
Hungary 1990	0.3	20.3	Philippines 1995	2.7	39.6
United States 1960	0.3	25.2	Colombia 2005	2.7	40.0
England/Wales 1881	0.3	25.5	Venezuela 1981	3.1	40.1
Hungary 1980	0.3	24.2	Greece 1991	3.1	21.9
United States 2000	0.3	14.2	Philippines 2000	3.2	37.8
Spain 1991	0.4	21.1	Panama 1990	3.2	41.5
England/Wales 1851	0.4	25.9	Panama 2000	3.2	41.6
Canada 1901	0.4	29.1	Colombia 1993	3.3	42.0
Romania 2002	0.4	26.1	Mongolia 2000	3.6	49.7
Rwanda 2002	0.5	51.5	Malaysia 2000	3.8	48.0
Norway 1875	0.5	25.3	Venezuela 1990	3.8	41.4
Belarus 1999	0.5	20.3	Greece 1981	4.1	27.6
Argentina 1991	0.6	24.7	Venezuela 2001	4.2	44.0
Argentina 1970	0.6	29.7	Malaysia 1980	4.3	49.8
United States 1920	0.6	40.6	Malaysia 1991	4.6	51.1
United States 1880	0.6	42.5	India 1999	5.6	64.3
United States 1910	0.7	41.1	India 1983	5.9	63.5
United States 1900	0.7	42.3	India 1987	6.2	63.6
United States 1930	0.7	39.5	India 1993	6.5	63.4
Brazil 1960	0.8	38.4	Kyrgyz Republic 1999	6.5	53.5
United States 1950	0.8	34.0	Greece 1971	6.5	34.9
Bolivia 1976	0.8	39.8	Palestine 1997	6.8	42.9
United States 1940	0.8	37.2	Ghana 2000	6.9	34.6
Argentina 1980	0.8	29.9	Guinea 1996	7.6	39.9
Brazil 2000	0.9	34.7	China 1982	10.4	47.9
Costa Rica 1984	1.0	38.6	China 1990	13.0	46.6
Chile 1982	1.0	37.1	Vietnam 1989	18.9	42.3
Brazil 1991	1.0	36.2	Iraq 1997	19.2	45.8

NOTE: Western European and North American samples are in bold; nineteenth-century samples from those regions (including 1900 and 1901) are in bold italic.

TABLE 4 OLS regressions of agricultural employment and demographic characteristics on stem families and joint families

	Stem family		Joint family	
	B	Standard error	B	Standard error
Agricultural employment	4.82	1.08***	0.83	0.49
Percent elderly	–3.15	0.26***	–0.27	0.12*
Marital fertility	–0.29	0.04***	0.00	0.02
Female marriage	–2.08	0.67**	–0.35	0.31
Male marriage	2.44	0.73**	0.50	0.33
Nonmarriage	–0.27	0.22	–0.34	0.10**
Unmarried elderly women	0.88	0.22***	0.16	0.10
Elderly couples	0.45	0.20*	0.00	0.09
De jure census	–1.97	1.37	0.34	0.62
Constant	–7.89	18.56	–7.73	8.47
Adjusted R square	0.80		0.31	
N	100		100	

*** p<.001; ** p<.01; * p<.05.

the joint family indicator are the percent of the population aged 65 or older and the percent never marrying; fertility, age at marriage, and even farming seem to have virtually no effect. The adjusted R-square is less than half as great for the joint family measure as for the stem family measure.

Figure 3 graphs the predicted percent in stem families against the observed percent. Samples that fall above the diagonal had fewer stem families than predicted by the model, and samples below the line had more than predicted. Most countries cluster closely around the diagonal, showing that a few simple economic and demographic indicators effectively predict most variation in coresidence. As in the previous figures, the historical samples from Western Europe and North America are identified by squares. If historical Western Europe and North America had an unusual aversion to stem family residence, we would expect these samples to fall significantly above the line. Because they cluster closely around the line, we may conclude that Western Europe and North America were not unusual with respect to the stem family measure.

Figure 4 shows the comparable graph for joint families, and the result is entirely different. There is little discernible association between the observed and predicted values. Every sample from Western Europe and North America, whether nineteenth century or more recent, hugs the left axis of the graph, and most fall substantially above the axis. The frequency of joint families is not strongly associated with demographic composition or agricultural employment and cannot account for the substantial variations across time and space.

FIGURE 3 Predicted and observed percent of elderly in stem families

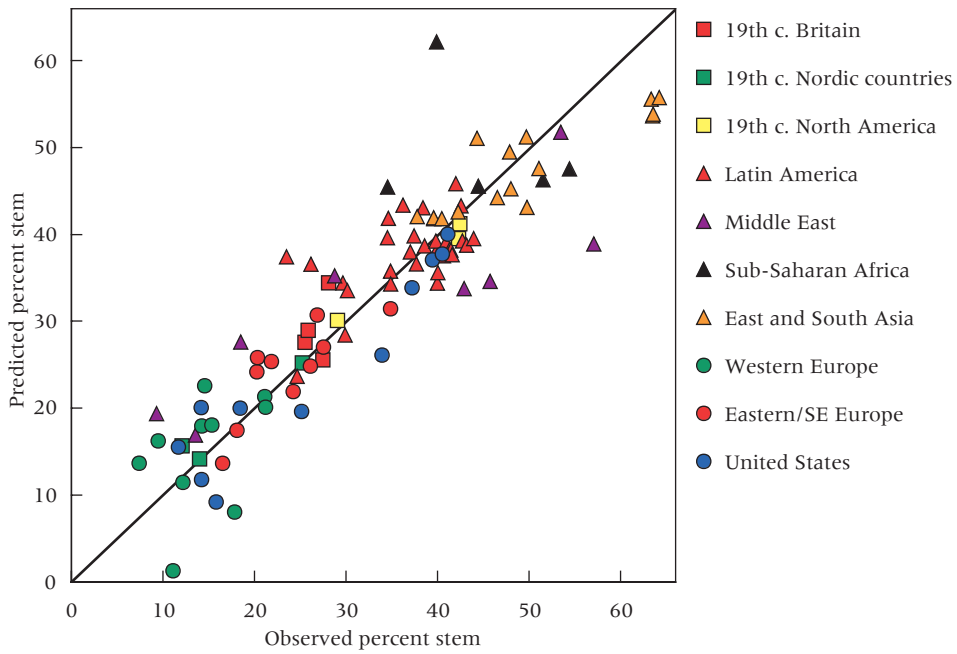
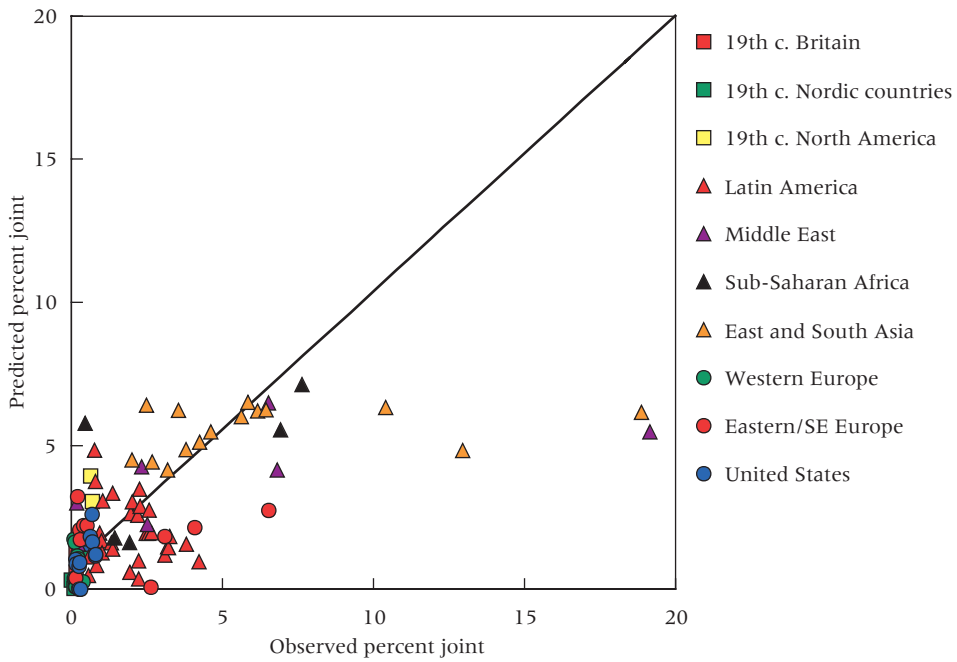


FIGURE 4 Predicted and observed percent of elderly in joint families



Discussion

We can draw two clear conclusions. First, unlike the measures in Ruggles (2009), which primarily reflected intergenerational coresidence, the measure of joint family structure is not closely tied to basic measures of demography or agricultural employment. This might lend support to the argument that cultural factors rather than structural ones are responsible for variation in the frequency of joint families. This negative finding, however, is far from conclusive; the model is simple, and a lack of clear association does not necessarily exclude the possibility that a more subtle model might have more power.

Second, the results provide support for a theory of a distinctive European family pattern. This finding contradicts my previous assertion that family patterns in Western Europe and North America over the past two centuries are similar to those found in the rest of the world during the past half-century. The distinctive European family pattern identified here, however, does not resemble the conception of the Northwest European family system that has dominated the literature for decades and that stressed neolocal marriage and nuclear family structure.

The real European pattern is not about neolocality or a preference for nuclear families, as Hajnal (1982) and others maintained: the percentage of stem families in Western Europe and North America in all periods was just about what one would expect, controlling for variation in basic economic and demographic circumstances. Rather, the real European family pattern concerns the lack of joint families: for at least the past century and a half, Europeans and North Americans have had a strict aversion to the coresidence of married siblings with an elderly parent. The geographic scope of that aversion may be broader than just Western Europe and North America; the IPUMS samples from the past half-century show virtually no joint families in Eastern Europe (excluding Greece), Israel, and parts of South America. Until we obtain high-quality comparable historical microdata from a wider range of places, however, it is premature to start drawing new lines across the map to delineate joint family zones.

Agricultural societies share common needs to sustain family farms from generation to generation, and old and young alike have powerful incentives to reside together. The old need help with heavy farm labor, and as they become frail and infirm they need assistance with daily living. The young need a livelihood and they hope to inherit the family farm. Ruggles (2009) showed that we can predict the extent of intergenerational coresidence with considerable confidence if we know just a little bit about demographic conditions and agricultural employment. This extension of that work tells us that we cannot so easily predict the configuration of those families. Intergenerational coresidence may be common to virtually all agricultural societies, but joint families clearly are not.

Notes

Figures in this article are available in color in the electronic edition of the journal.

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1 Coresident married couples are counted as a single observation because they share the same living arrangements.

2 Evidence on household headship and other indicators suggests that such old-age support is rarely the dominant mode of multigenerational family formation (Ruggles and Heggeness 2008; Ruggles 2003, 2007, forthcoming).

3 The latter finding is counter to expectations, since joint families have been thought to be rare in sub-Saharan Africa (Goody 1989).

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