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Siegfried Gruber and Mikolaj Szoltysek

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What is This?

Stem Families, Joint Families, and the European Pattern: What Kind of a Reconsideration Do We Need?

Siegfried Gruber[1] and Mikołaj Szołtysek[1]

Abstract

This article makes a new contribution to the discussion of historical European family forms. Its starting points are two recent contributions by Steven Ruggles in which the author discussed the historical appearances of stem and joint families across the globe. Drawing on most recent developments in census microdata infrastructure from historical Eastern, Central, and Southeastern Europe, the authors pinpoint limitations pertaining to the usage of IPUMS (Integrated Public Use Microdata Series) and NAPP (North Atlantic Population Project) collections for the investigation of European family systems. Using newly acquired materials and refined conceptual tools, they enhance the knowledge about the spatiotemporal distribution of stem- and joint-family arrangements in a broader European context. As the frequency of joint families in the regions under study cannot be fully accounted for by referring to measures of economic conditions and demographic structures alone, the authors speculate about some additional factors which may explain the observed differences in joint-family coresidence across historic Eastern Europe.

Keywords

family systems, living arrangements, demographic variation, stem family, joint family, elderly

Introduction

The use of scientific samples of census data that are comparable across space and time is revolutionizing research into demography, economics, and family history. Among the many issues discussed in association with these new developments in data infrastructure, the questions of who lives with whom, and for what reasons, remain central.[1] Variations in the components of the coresident domestic groups are often considered the most crucial indicators of diversity in family systems. Diversity in people's living arrangements reflects a variety of preferable or achievable residential patterns and likely indicates differential notions regarding the way obligations to kin from outside the immediate

[1]Laboratory of Historical Demography, Max Planck Institute for Demographic Research, Rostock, Germany

Corresponding Author:
Mikołaj Szołtysek, Laboratory of Historical Demography, Max Planck Institute for Demographic Research, Konrad-Zuse-Strasse 1, Rostock 18057, Germany
Email: szoltysek@demogr.mpg.de

family are structured. The study of residence patterns not only contributes to a better understanding of household composition but is also of primary importance in explaining demographic outcomes. As recent research suggests, domestic groups formed according to stem- and joint-family rules would make for different fertility outcomes. Moreover, these groups may perform welfare functions toward their members on a different basis and may cope with economic hardships in a different manner.[2]

The starting points for this article are two recent contributions to the discussion of family systems published in *Population and Development Review* by Steven Ruggles.[3] In the first of these studies, Ruggles compared the living arrangements of the elderly on the basis of eighty-seven censuses of thirty-four countries from around the world. He used six control variables to test whether a distinctive ''Northwest European family pattern'' can be proved. By comparing the observed and predicted levels of coresidence in the cross-temporal and cross-national census collection, Ruggles sought to refute the idea of the existence of a European and North American exceptionalism in nuclear family residence. In a recent article, Ruggles again used a huge assemblage of census microdata to assess the spatiotemporal distribution of stem and joint-family arrangements in thirty-five historical and contemporary populations. Using two measures of coresidence among the aged and basic controls for agricultural employment and demographic structure, he argued that European and North American societies ''have had a long standing aversion to joint-family living arrangements.'' According to Ruggles, this lack of a joint-family organization is a truly defining feature of the ''European family pattern,'' past and present.[4]

Eastern and Southeastern European census samples were also used in these two articles. They showed that there were higher proportions of multigenerational households in these regions than in Northwestern Europe and North America but lower proportions than in other non-European countries.[5] Stem families were found to be more prevalent in Eastern and Southeastern Europe than in Western Europe or North America but less common than in other non-European countries. According to Ruggles, joint families were quite rare in the European East and Southeast, with Greece being the only exception. Whereas for stem families, the predicted and the observed levels of coresidence match up quite well, the observed percentages of joint families in Greece were consistently higher than the shares that had been predicted.[6] Ruggles' major conclusion is that the measure of joint family structure is not closely tied to basic measures of demography or agricultural employment, and therefore that cultural, rather than structural, factors might be responsible for the variations in the frequency of this type of coresidence.[7]

Ruggles' recent articles make valuable contributions to the discussion of family forms. His renewed affirmation of the role of demographic factors in accounting for differentials in family structure is likely to inspire further research into the factors responsible for the variations in residence patterns across the globe. Nevertheless, although Ruggles characterizes his most recent analysis as representing Europe in its entirety, his article actually lacks evidence from pre-1980 continental Europe, and from Eastern Europe in particular. Whereas the oldest data used by Ruggles dates from 1851, the eastern part of the continent is represented in his last article by only five countries, for which census records go back no more than forty years from the present time. The structure of the current IPUMS (Integrated Public Use Microdata Series) and NAPP (North Atlantic Population Project) collections prevents Ruggles from capturing broader European dimensions with regard to family characteristics. In particular, the limits of Ruggles' sample made it impossible for him to recognize the true prevalence of joint families in a broader European context. As rich as the IPUMS and NAPP collections currently are, they are still not rich enough to justify the breadth of the claims Ruggles has made. This article is an attempt to go beyond these limitations.

Through analysis of newly available census microdata, the authors present in this article evidence of joint-family coresidence in historic Eastern Europe. This demonstrates that the IPUMS/NAPP samples contain no traces of joint families in Eastern Europe due to insufficient spatial and time coverage for Eastern European regions and shows that joint-family arrangements have been

common in at least some of these eastern areas in the recent and more distant past. If this argument is correct, then Ruggles' observation that "the real European pattern concerns the lack of joint families[8]" would need to be revised. Accordingly, the notion that "Europeans ... have had a long standing aversion to joint family arrangements" might appear to be equally misleading. Finally, the authors suggest that Ruggles' definitions of stem- and joint-family households are too crude to capture the diversity of living arrangements that have been found in historical data.

For the most part, the authors followed the methodology set out in the two articles by Ruggles mentioned above. His data set is used, but enriched with a new collection of census microdata from Eastern, Central, and Southeastern Europe from between the late eighteenth and the early twentieth centuries. To this new assemblage of data, the same set of measures and control variables was applied as Ruggles did in the regression analysis, and nearly the same prediction model was used amending it only slightly by reducing the number of outlying observations. Using more elaborate procedures to define stem- and joint-family coresidence, a case for methodological refinement is made that can help to remove biases inherent in Ruggles' investigation into the degree to which adults related by blood, marriage, or adoption live together.

In line with Ruggles, the authors initially observed that the frequency of joint-family arrangements in the regions under study cannot be fully accounted for by referring to the measures of economic conditions and demographic structures alone. Although this study's model has a better predictive power, a significant part of the observed variation in elderly coresidence patterns still remains unexplained. In the final section of the article, the authors speculate about some additional factors which may account for the observed differences in joint-family coresidence across historic Eastern Europe.

Data and Regions

Starting with the data Ruggles used for his recent article, the corresponding variables were constructed for this data collection following his approach. To investigate whether Ruggles' hypotheses about the proportions of stem and joint families also hold true for Eastern Europe in the past, historical census microdata from three different countries of the region was used: the Polish–Lithuanian Commonwealth in the end of the eighteenth century, Jasenica county in central Serbia in the nineteenth century, and Albania in 1918.

The first compilation (The *CEURFAMFORM Database*) contains data on 21,132 rural households from late-eighteenth-century Poland–Lithuania, belonging to 236 parishes and 900 settlements, and with an overall population of nearly 130,000 persons. The data were derived from various types of population enumerations listing individuals by residential units, with kinship relationships made transparent within each domestic group.[9] More than 90 percent of these listings come from the period 1766–1799. The territories under study cover the western and southern fringes of the Polish–Lithuanian Commonwealth (regions 1 to 5, 6 + 7); eastward into the borderland between present-day Poland, Belarus, and Ukraine (region 8); and then even farther east into Belarus, south from Minsk (region 11 N and 11 S, respectively); and into Western Ukraine (region 10). Various parts of this data collection have already been analyzed.[10]

The Serbian data consist of the population censuses of 1863 and 1884 for eight villages in the district of Jasenica in Central Serbia, including the village of Orašac.[11] The basic results of these censuses were officially published.[12] The results of the research into household structures, ages at marriage, and migration were also previously published.[13] The small number of elderly people makes it necessary to treat these two sources together.

From January 1916, Northern and Central Albania was occupied by the Austro-Hungarian army, and a population census was taken on March 1, 1918. The checking and processing of the data had to be stopped due to the planned withdrawal of the army in October. The order to destroy all of the

census material was ignored except in some areas in the south of the occupied territory.[14] The surviving material, which covers the major part of the country, therefore includes 435,836 out of the 524,217 persons who lived in about 1,800 villages, towns, and cities in the territory administered by Austria–Hungary during World War I. The census director published basic tables in 1922, supported by funds from the Albanian government.[15]

Even though the data span great distances of space and originate from different administrative practices, they provide generally comparable information on living arrangements. The majority of individuals in this collection were listed by domestic groups comprising all of the people occupying separate residential units, sharing meals, and living under the supervision of the household head. Such units consisted not only of the head's core family, but also of his immediate and more distant relatives, as well as coresident servants and inmates or lodgers. There were some inconsistencies in the way domestic groups were represented in the two Balkan censuses (particularly in urban sites). However, this had almost no effect on estimations of the living arrangements of the aged (less than 1 percent of them could be affected by differences in definitions). For most individuals, the information on his or her name and surname, age, and kin relation to other household members was either explicitly given or easily inferred.

The Polish–Lithuanian sample comprises exclusively rural societies engaged in small- and middle-scale farming. An overwhelming majority of the population of all regions were serfs living in personal and hereditary subjugation. The Polish (and Catholic) preponderance over western areas (regions 1–7) was diminishing in favor of large numbers of Belarussians and Ukrainians (mostly Uniates, i.e. Greco-Catholics) in the eastern provinces (8, 10, 11 N, and 11 S). This ethnic and religious divide on historical Polish territories was a long-lived one, and it retained its spatial validity well into the 1920s and 1930s.

The population in the Albanian census was predominantly Muslim (78.2 percent), with a Catholic minority in the north (18.6 percent) and an Orthodox minority in the south (3.1 percent) and was almost exclusively Albanian. The economy was dominated by agriculture, and the urban population made up only 13.2 percent of the total. Very few Albanian adults who lived outside of the cities were literate.

Most of the land in Serbia was owned by smallholders, and over the course of the nineteenth century, the focus of their activities shifted from animal husbandry to agriculture. Pigs were the main source of cash income for the rural population.[16] The crop yields per hectare were among the lowest in Europe, and the peasant economy was still overwhelmingly oriented toward subsistence.[17] The people who lived in these eight villages were almost all of Serbian nationality and were members of the Orthodox Church.

Comparing Albania from 1918 with Poland–Lithuania of the eighteenth century may raise some questions. Sklar has noted that marriage behavior among the populations of the Czech, Baltic, and Polish regions differed from that of the people living in the Balkan countries during the demographic transition,[18] which makes it particularly interesting to compare these two regions. In addition, to test the applicability of Ruggles' model, populations are needed among whom a considerable proportion were living in joint-family constellations, and both of these data sets fulfill this requirement. The Albanian population census of 1918 and the Polish–Lithuanian database are the only existing databases of historical census microdata in Eastern and Southeastern Europe that are large enough to allow for an investigation of demographic conditions and household compositions for several regions within a country.

Even though these Eastern and Southeastern European data span long periods of time, from a demographic perspective, these are pretransitional populations. In the majority of historical Polish territories, the demographic transition did not start before the end of the nineteenth century, and the Belarussian population exhibited the highest fertility levels in Eastern Europe well into 1920s.[19] Albania was the last country in Europe to enter the demographic transition (i.e., after the Second World War).

Variables and Data Exploratory Analysis

In order to compare patterns of living arrangements, Ruggles used the living arrangements of individuals and couples aged 65 or older. Looking at the residence patterns from the perspective of the elderly makes it possible to partly overcome the weaknesses of household-level variables, such as those used in the Hammel–Laslett model, which is popular among family historians.[20] Measuring coresidence from the perspective of the elderly minimizes the effects of variation in demographic conditions on indicators of family structure. The majority of older people have the demographic potential to reside with offspring, even in populations in which few households have the potential to include elderly kin.

Like Ruggles, the elderly population is defined as persons aged 65 or older, and married couples in which both partners were aged 65 or older are treated as single observations, since they shared a single living arrangement.[21] Accordingly, the analysis focuses on the residence of these elderly people in multigenerational households. Again like Ruggles[22], multigenerational households are subdivided into stem-family households and joint-family households in order to capture two distinct manifestations of the complexity of family coresidence. In the first part of the analysis, the operationalization of the two dependent variables was based on definitions suggested by Ruggles. Stem-family households were multigenerational coresident groups, with no more than one married child. Joint-family households were multigenerational coresident groups with two or more married children. In later sections of the article, the authors present the refined measures of stem- and joint-family living arrangements.[23]

The authors also constructed simple control variables to account for regional variations in demographic conditions in the study's data sets (Table 1). These variables are identical to those used by Ruggles, and the detailed descriptions and rationale for each of them are documented in his studies.[24] There are some potential limitations to the application of this standard set of predictors to these Eastern and Southeastern European data. In particular, the variable *agricultural employment*, which was of key theoretical importance in Ruggles' works, had to be operationalized differently in this case. Information about occupations is missing in most of the Serbian data, but since these data refer to populations engaged predominantly in agriculture, all persons without a stated form of employment outside of agriculture are assumed to be employed in agriculture. There is also no information on social class or the occupation of household heads in the Polish–Lithuanian data set, although it is known that the data deal with exclusively rural populations. Therefore, the rate of agricultural employment was diversified using background information about the prevailing ecological conditions and economic activities other than farming among regional peasant strata. In the Albanian census, about one-third of the male population of working age either has no reported occupation or was said to "help his relatives." These men are grouped into the occupational sector of the head of their household. In addition, there is information available for agricultural activities. All men whose occupation is still unknown, but who were involved in agricultural activity, are grouped into the agricultural sector. The remaining men are coded as being nonagricultural. Marital fertility can be slightly overestimated in these samples. The census takers usually reported the number of children from the point of view of the mostly male household heads, and therefore some of the wives would have been the stepmothers of the children in the household. Marital status is not given in the Serbian census of 1863, and these data are derived from the information about the presence of a spouse or of children. The assumption is that men with unknown marital status in the age group twenty to twenty-four years were unmarried, and that men in all older age groups were either married or widowed. The quality of marital status reporting in the late eighteenth-century Poland–Lithuania also varied, as information on the marital status of life-cycle servants, some lodgers, and elderly solitary women was frequently missing. All of the servants are assumed to be unmarried.[25] In a few regions where the proportion of never-married women increased considerably after the age of 34, the distribution of

Table 1. Characteristics of Census Samples and Values of Variables used in the Analysis

Region	Agricultural employment (Log of % men aged 18–64 employed in agriculture)	Percentage elderly (% of population aged 65 or older)	Marital fertility (Age-standardized marital fertility ratio)	Female marriage (SMAM) (Female singulate mean age at marriage)	Male marriage (SMAM) (Male singulate mean age at marriage)	Nonmarriage (% never married at ages 45–54 (both sexes))	Unmarried elderly women (% pop 65+ who are women without spouses)	Elderly couples (% pop 65+ who are residing with spouse)	De jure census (De jure census enumeration rule)	Population	Households
Albania 1918	4.3	5.1	60.6	18.6	27.2	3.8	47.9	40.0	1	140,611	27,794
North1	4.6	4.8	55.1	17.8	27.3	4.7	36.4	44.6	1	6,857	1,057
North2	4.5	5.0	72.2	18.2	26.6	4.2	48.4	37.9	1	14,715	2,269
Northeast	3.9	4.6	46.5	20.9	29.2	2.6	32.5	47.8	1	13,309	2,696
North-Center	4.5	5.1	55.3	17.3	26.8	3.1	54.0	34.9	1	9,503	1,864
Center	4.5	4.7	58.7	17.1	25.7	4.4	51.9	37.9	1	6,147	891
Center-West	4.4	3.4	62.3	18.2	22.6	0.1	39.8	45.4	1	8,838	1,756
Elbasan-N	4.5	4.5	60.7	21.2	28.1	5.2	37.5	54.2	1	3,647	618
Elbasan-S	4.5	5.2	48.9	20.8	26.3	1.0	43.4	49.1	1	5,482	1,093
Southeast	4.4	7.0	57.4	20.8	29.9	3.4	50.3	42.8	1	6,724	1,418
South	4.3	6.1	61.6	17.8	26.1	1.8	49.5	42.2	1	7,424	1,275
urban	2.6	5.3	62.9	19.5	30.3	6.5	55.8	33.6	1	57,965	12,857
Poland–Lithuania eighteenth century	4.5	3.0	64.3	20.0	24.0	1.2	27.6	53.5	0	127,847	21,132
PL West	4.5	2.9	69.4	22.5	27.3	1.8	30.8	56.8	0	47,938	7,921
PL1	4.5	3.5	83.9	25.1	28.5	0.9	25.8	62.9	0	2,543	545
PL2	4.5	3.6	78.1	24.0	28.9	2.5	34.6	51.5	0	4,559	646
PL3	4.5	3.2	71.1	21.5	27.8	2.8	29.9	58.0	0	12,893	1,984
PL4	4.5	3.7	75.1	22.3	26.4	1.3	32.1	53.1	0	8,358	1,317
PL5	4.5	2.2	57.1	22.1	26.6	1.6	25.7	64.2	0	8,320	1,562
PL6+7	4.5	2.3	71.6	21.4	27.8	1.2	34.2	54.4	0	11,265	1,867
PL East	4.6	3.0	61.5	18.4	22.0	0.7	25.6	51.5	0	79,909	13,211
PL8	4.6	2.5	58.1	18.2	23.6	0.8	24.7	45.2	0	25,193	4,520
PL10	4.6	3.0	60.5	19.1	23.1	1.2	26.6	52.0	0	14,026	2,100
PL11N	4.6	3.7	63.1	20.3	24.2	0.6	23.3	53.3	0	16,285	2,855
PL11S	4.6	3.2	64.4	16.7	19.9	0.4	27.3	53.3	0	24,405	3,736
Serbia nineteenth century	4.6	1.0	86.1	19.6	22.3	0.9	49.7	26.1	1	16,562	2,573

people by marital status was adjusted to the lowest proportion of celibates in the given data set. Finally, the numbers of cases of these data sets are much smaller than Ruggles' collections and might therefore be more affected by the values of single cases.

Table 1 summarizes regional variations for the nine predictors in these data sets. The Polish–Lithuanian and Albanian data sets are of nearly the same size, while both are much larger than the Serbian component of this collection. The values of all of the independent variables differ significantly both between the largest groupings, and between the regions within them. The percentage values for the elderly population and the proportions of the never-married among those aged 45–54 varied particularly between all of the regions. For other variables, however, the variation was smaller. Still, the populations under study differed markedly with regard to nuptiality. For the most part, males in Albania married very late, well above the age of 25, as did men in some western regions of historical Poland. By contrast, male Serbians, Ukrainians, and Belarussians tended to marry at much younger ages. The female ages at marriage were, meanwhile, generally consistent with the characteristics of Hajnal's "joint household formation systems."[26] The average age at first marriage among women was under 21 for the whole of Albania and was as low as under age 19 in Poland's eastern regions. Only in the Western Polish regions did the average female age at marriage rise above twenty-one to twenty-two years. Differences in the female age at marriage were particularly dramatic across the territories of historical Poland.

Table 2 summarizes regional variations for the two measures of living arrangements, and this time also includes large data groupings from Ruggles' collection. Ruggles has noted that the lowest percentages for living in stem families were observed for Western Europe in the twentieth and twenty-first centuries and for the Nordic countries in the nineteenth century. Whereas North America has slightly higher rates, the rates from the twentieth and twenty-first centuries in Eastern and Southeastern Europe are much closer to the rates of Western Europe and North America than to those of other regions in the world (particularly in Asia). However, new data sets from historic Eastern Central and Southeastern Europe show rates of living in stem families that are very close to the rates of the Asian and African samples in Ruggles' data. The Serbian rate, in particular, is almost as high as the Asian mean. The highest rates for some single regions within these new data sets are almost as high as the highest country means recorded for Asian or African countries. These regions are the district of Elbasan-South in Albania and region 8 in the Polish–Lithuanian data set (today Western Ukraine), where more than 50 percent of the elderly were living in stem families, according to Ruggles' definition. In Albania, the proportions in the north were generally higher than in the central part of the country, while the western part of Poland–Lithuania also had generally lower rates than the eastern parts of the country. At least in this regard, Serbia was much more similar to Northern Albanian and to the eastern part of the Polish–Lithuanian areas than to the other regions. A marked exception is the low proportion of elderly people living in stem families in region 1 of Northern Poland inhabited by German Protestants, which is lower than in any country in Ruggles' data set.[27]

The share of the elderly living in joint families is generally much lower. The Western European and North American countries have rates that are consistently below 1 percent. The contemporary Eastern and Southeastern European samples have only 1.8 percent on average, with only Greece in 1971 reaching 6.5 percent. This level is only surpassed by East and South Asian data, while the averages for the other regions fall between these extremes. Only four countries (Iraq 1997, Vietnam 1989, China 1990, and 1982) have shares of elderly living in joint families that are above 10 percent. In contrast, the Albanian census of 1918 has a proportion of 13.9 percent, the Polish–Lithuanian data set has an average of 15.7 percent, and the Serbian sample even has an average of 27.5 percent; making these data sets comparable to the highest rates of single countries in Ruggles' data set. The Polish–Lithuanian data reveal a marked difference between the region's western and eastern halves: the western part of the region has rates that are very similar to those seen in nineteenth-century Western Europe, while the rate of joint-family coresidence in the eastern half of the region is, at

Table 2. Census Samples by Percentage of Stem and Joint Families among the Aged

Region	Percentage elderly residing in		
	Stem family	Joint family	*N*
Albania 1918	40.1	13.9	6,572
North1	47.3	9.8	328
North2	35.0	22.3	641
Northeast	41.4	16.4	461
North-Center	46.5	11.7	484
Center	41.5	19.7	280
Center-West	39.6	26.0	270
Elbasan-N	42.4	5.5	176
Elbasan-S	57.8	9.5	263
Southeast	38.9	1.2	400
South	37.9	16.6	385
urban	35.2	9.5	2,884
Poland–Lithuania eighteenth century	44.3	15.7	3,419
PL West	36.8	0.8	1,254
PL1	6.3	–	80
PL2	35.2	2.1	145
PL3	37.4	0.9	348
PL4	41.2	0.8	262
PL5	44.6	0.5	184
PL6+7	36.6	0.4	235
PL East	48.5	24.3	2,165
PL8	53.9	14.5	572
PL10	44.4	31.3	374
PL11N	48.0	18.8	542
PL11S	46.8	33.2	677
Serbia Nineteenth century	49.0	27.5	153
Nineteenth century Europe and America			12,1705
Britain	26.8	0.3	37,091
Nordic countries	17.1	0.2	45,495
North America	38.0	0.6	39,119
Twentieth and twenty-first centuries			1,987,662
Latin America	37.1	2.0	814,395
Middle East	33.7	4.8	335,613
Sub-Saharan Africa	45.0	3.7	104,604
East and South Asia	50.2	6.2	51,097
Western Europe	14.5	0.2	126,833
Eastern/Southeastern Europe	23.7	1.8	291,948
United States	26.5	0.5	263,172

24.3 percent, higher than in any country in Ruggles' collection and is second only to that of the Serbian sample. Within Albania, we again see higher rates in the northern parts and lower rates in the central parts of the country. The only exceptions are the region North2, with less than 10 percent; and the region South, with 16.6 percent. Regarding living in stem families, the Albanian urban data resemble data from North America in the nineteenth century and from the Latin American or Middle Eastern samples in the twentieth century. The proportion of elderly urban Albanians living in joint families is even more exceptional. With values of 9.5 percent, it is higher than any African sample in Ruggles' data. The highest rates can be found for regions 11 S and 10 in the eastern part of historic Poland–Lithuania (today Southern Belarus and Northern Ukraine), where more than 30 percent of the

elderly were living in joint families—more than in any Albanian or Serbian region, and far more than in any country in Ruggles' collection.

This exploratory analysis points to the existence of regions with widespread joint living arrangements in Eastern and Southeastern Europe. They also confirm the existing knowledge that the complexity of households was higher in the north of Albania than in its central parts, and higher in the east than in the west of Poland–Lithuania.[28] But we must still determine whether these exceptional proportions of joint families can be explained by demographic rates and agricultural activities alone, or whether some other factors should be considered. We also want to know whether the striking differences within countries can, to a high degree, be explained by the control variables.

Predicting Elderly Living Arrangements

In line with Ruggles, the authors used ordinary least squares regression to control for the effects of variation in economic and demographic conditions on the living arrangements of the elderly across the samples. Accordingly, the main goal of the regression exercise was to assess systematically whether the level of coresidence in a particular country or region was high or low, given the demographic and economic circumstances. This strategy relies on using the regression to predict the living arrangements of the aged in each census sample, and then to compare this predicted family structure with the observed values. This is how it will be gauged whether a given population had higher or lower levels of elderly coresidence than would be expected on the basis of that population's economic and demographic characteristics.[29]

The results of the country-level analysis overlap almost completely with Ruggles' original estimations.[30] They show that stem families in Poland–Lithuania and Serbia fit relatively well into the prediction. Only for Albania were the observed values significantly lower than would be expected, given the economic and demographic characteristics of the population. Like in Ruggles' analysis, the comparable model for joint families revealed a much less clear association between predicted and observed values. All of the countries with a proportion of joint families above 10 percent had substantially higher observed rates than those that were predicted, and the three new data sets also showed this pattern. It can be suspected, however, that lumping together different regions of Poland–Lithuania and Albania may mask heterogeneity within these "samples."

To account for this variation, the Polish data is split into western and eastern components and repeated the whole exercise (Figure 1A and B). Looking at stem-family coresidence, we find that the observed and the predicted percentages match almost exactly for Eastern Poland, while the country's western territories had much lower observed values than predicted. For the Serbian data, the model was found to be a good fit. An interesting aspect of this model's fit is that neither of these two societies had a tradition of stem-family household formation rules or characteristic patterns of coresidence, whereas there was an indication of a stem-family pattern in Polish western regions.[31] When looking at the percentages of joint families, we can see that Poland's west hugs the left axis very much like the Western European countries. On the other hand, Poland's east, together with Serbia, are the two cases with the largest differences between the observed and the predicted percentages. The gap between the western and eastern territories of Poland seems to be as large as it possibly could be.

To learn more about the effects of regional variation in these Eastern and Southeastern European data, an additional model is run which included Polish–Lithuanian and Albanian data sets, which were this time divided into their regional components (the overall number of observations was increased from 103 to 122, with Serbia treated as single case; Table 3). The model's fit for stem families decreased (to 0.68), while it increased slightly for joint families (0.41). Adding these 22 regions to Ruggles' original stem-family model removed the effects of several variables previously significant (i.e., male and female marriage). Regarding joint-family coresidence, the
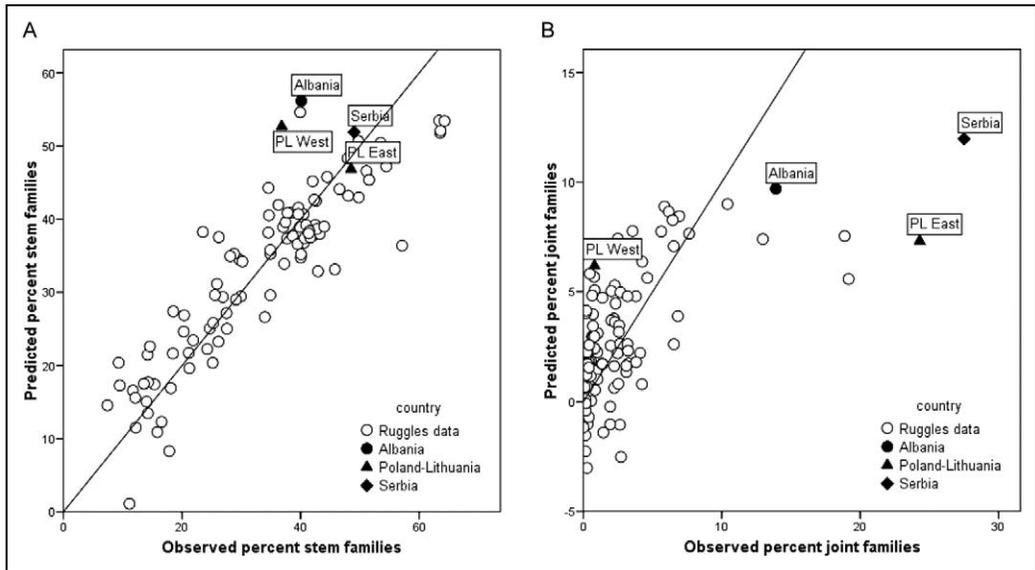
Figure 1. A, Predicted and observed percentage of elderly in stem families (104 census samples). B, Predicted and observed percent of elderly in joint families (104 census samples).

Table 3. OLS Regressions of Agricultural Employment and Demographic Characteristics on Stem and Joint Families (122 Census Samples)

	Stem family		Joint family	
	B	SE	B	SE
Agricultural employment	2.71	1.17*	0.96	0.80
Percentage elderly	−2.91	0.31***	−0.11	0.21
Marital fertility	−0.28	0.05***	0	0.03
Female SMAM	−0.22	0,49	−0.97	0.34**
Male SMAM	0.01	0,54	0.11	0.37
Nonmarriage	−0.29	0,24	−0.52	0.17**
Unmarried elderly women	0.51	0.20*	−0.13	0.14
Elderly couples	0.01	0,20	−0.20	0.14
De jure census	−3.24	1.42*	1.35	0.97
Constant	49.36	17.26**	37.42	11.82**
Adjusted R^2	0.68		0.41	
N	122		122	

*$p < .05$.
**$p < .01$.
***$p < .001$.

crucial difference brought about by the new model was to make the inverse relationship with female age at marriage significant.

Figure 2A and B plot observed against predicted values for the model discussed above. Most of the Eastern European regions cluster around the diagonal of predicted and observed percentages living in stem families, with the exception of the Polish region 1 only. Again, the goodness of fit of the model is surprising for these Eastern European populations who adhered to a lesser extent to stem family rules. All of the Eastern Polish regions except for one are dispersed below the
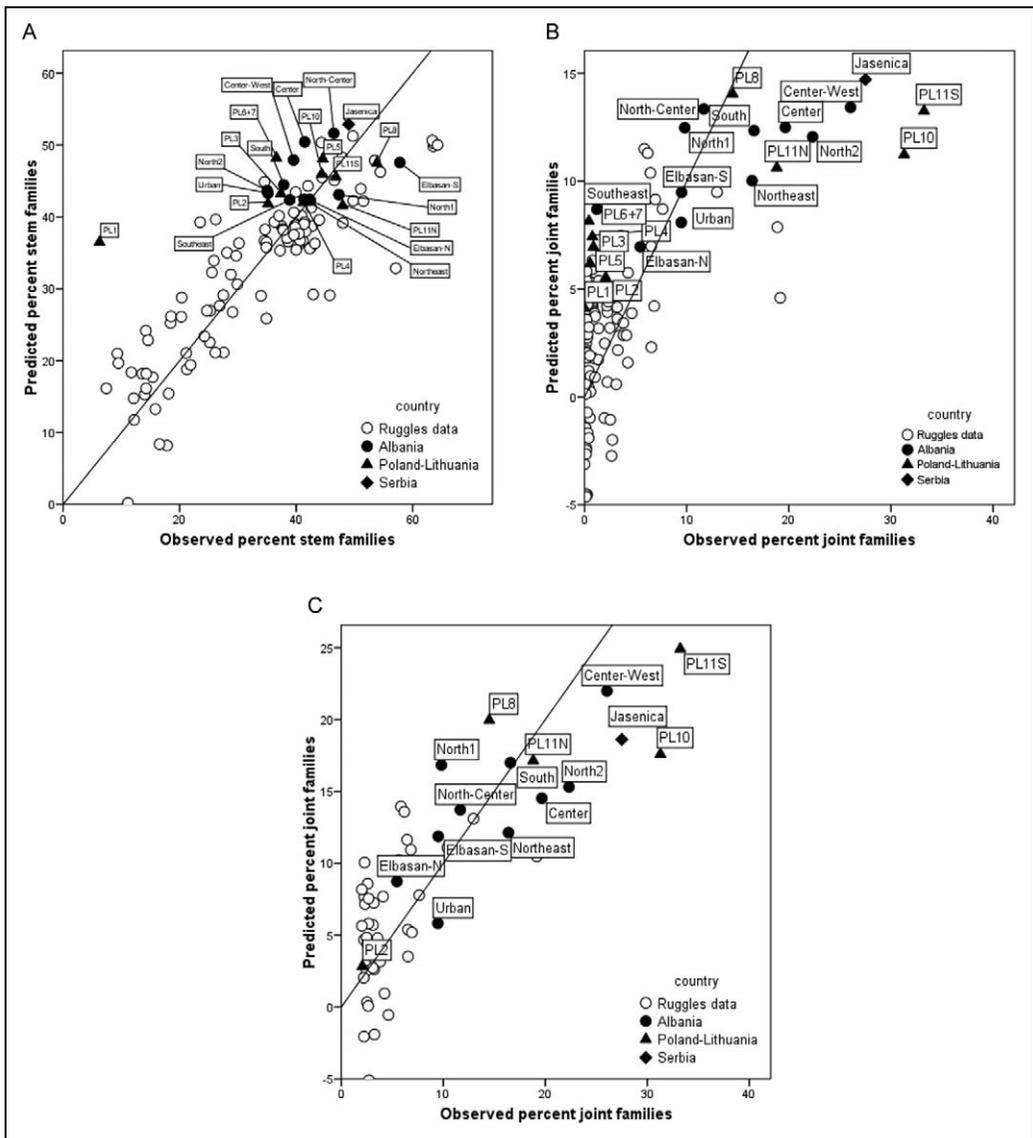
Figure 2. A, Predicted and observed percentage of elderly in stem families (122 census samples). B, Predicted and observed percentage of elderly in joint families (122 census samples). C, Predicted and observed percentage of elderly in joint families (59 census samples).

prediction line, and the same is true for half of Albanian regions and for Serbia with regard to living in joint families. For all of them, the predictive power of the model is very weak. Five Albanian regions and Polish eastern region 8 are the only ones for which the prediction works quite well. The rest of this collection is strongly clustered near the left axis and displays values of joint-family coresidence, which are much lower than predicted.

Almost 50 percent of all of the observations in Ruggles' collection concerned populations with less than 2 percent of the elderly living in joint families. This could distort the overall model for joint families simply by including countries for which there will never be any joint families, regardless of how the control variables are changed. To minimize these effects, this model was re-run only for

Table 4. OLS Regressions of Agricultural Employment and Demographic Characteristics on Joint Families (59 Census Samples)

	Joint family	
	B	SE
Agricultural employment	−0.47	1.42
Percentage elderly	0.85	0.40*
Marital fertility	0.11	0.06
Female SMAM	−1.62	0.43***
Male SMAM	−0.88	0.47
Nonmarriage	−0.77	0.24**
Unmarried elderly women	−0.41	0.19*
Elderly couples	−0.15	0.18
De jure census	5.60	1.66**
Constant	81.22	20.23***
Adjusted R^2	.57	
N	59	

*$p < .05$.
**$p < .01$.
***$p < .001$.

those countries for which the rate of elderly coresidence was at least 2 percent (the number of observations thus dropped to 59).[32]

The new regression model of residence in joint families (Table 4) is more powerful (40 percent increase of adjusted R^2 from .41 to .57). The variables significantly associated with the joint family indicator are now female age at marriage; the *de jure* rules of enumeration; the percentage of never-married, unmarried elderly women; and the proportion of the elderly. Male marriage now has a negative sign (but remains nonsignificant), which makes sense because a low male age at marriage increases the potential for coresidence, with married offspring among the elderly. The proportion of the elderly becomes significant but is now positively associated with a joint-family measure, which runs counter to theoretical expectations. More confusing is the fact that agricultural employment now becomes negatively related to the dependent variable, although it remains nonsignificant.

The goodness of fit of this new model is illustrated with Figure 2C. What is striking is the lack of real outliers in the new version of the scatter plot. Up to a certain point, all of the current observations are scattered equally on both sides of the diagonal. The model seems to work particularly well for Albania. For the two Polish eastern regions with the highest propensity for joint-family coresidence (regions 10 and 11 N), as well as for Serbia, it is weaker. Therefore, there is still something left unexplained by a simple structural model in elderly coresidence patterns in these regions of Eastern and Southeastern Europe (43 percent of the observed variation remains unexplained), even after the countries with no signs of joint-family organization have been excluded. It may well be that for these regions to fit into the predicted pattern, an additional factor not covered by the control variables, like the ecotype or a cultural disposition to live together with relatives in the same household, should be taken into account.

Measuring Elderly Living Arrangements with New Definitions

Ruggles defined stem-family households as multigenerational coresident groups with no more than one married child. Accordingly, he defined joint-family households as multigenerational coresident groups with two or more married children. He also argued that his two measures of multigenerational

coresidence capture properly both stem- and joint-family arrangements.[33] The authors think that this is not entirely true.

First, the stem-family system may include a variety of household forms, and there is disagreement about exactly how to define it, particularly with quantitative measures in the cross-section.[34] Second, under the pretransitional patterns of high mortality, which are applicable at least to these historical data sets, many of the truly multigenerational coresident groups (that is, resulting from either stem- or joint-family household formation rules) might well be composed of coresident ''truncated'' families—for example, an elderly couple residing with a widowed son or daughter and their grandchildren.[35] Thus, it seems more reasonable to base the definition of multiple-family coresidence on the notion of a ''conjugal family unit'' (CFU) rather than on married couples, whereby the main structural principle of the CFU would be the existence of a husband–wife or parent–child relationship.[36] Third, given the ''perennial'' multiple family arrangements that are known to have existed in some parts of historical Eastern Europe,[37] a considerable proportion of elderly people may actually have coresided with married lateral kin rather than with children or children-in-law or with both types of kin. In many pretransitional societies, joint-family arrangements implied a patrilateral (and, less frequently, a matrilateral) extension to the core family. The most important relatives for such additional units were the CFUs of brothers, nephews, or cousins.[38] Numerous cases of this type of residential arrangement are to be found in these Albanian, Polish, and Serbian data sets.

Following this rationale, both forms of complex family arrangements were refined in these data sets. The new definition of living in stem families includes living with a CFU of a child, child-in-law, or grandchild. Living with a CFU of a child (or child-in-law) and a CFU of a grandchild also fit this definition, while the presence of two or more CFUs of children and children-in-law, or of two or more CFUs of grandchildren, make the household a joint-family domestic group. Accordingly, not only those elderly who live with two or more married children are considered to be living in joint families, but also those living with all kinds of married lateral relatives (or, more precisely, CFUs belonging to them). In these residential arrangements, living with a married nephew would therefore substitute for living with a married child. This new definition of living in a joint family can also be reduced to a simple formula: it is living in a multiple-family household according to the Hammel–Laslett scheme which is not a stem family according to the new definition. The authors believe that if we miss a major part of coresidence with married relatives from the point of view of the elderly, the results of an analysis of joint-family arrangements might be biased. These joint-family coresidence patterns would be underestimated, especially in societies with a higher proportion of lateral extensions within the household.

The results of these adjustments are given in Figure 3A and B. Regarding the stem-family measure, there is only one region in this data set with a complete match between the new (living in stem families) and Ruggles' (living with one married child) definitions (region 11 N in Poland–Lithuania), although the overall differences are generally small. Ruggles' notion of stem-family coresidence clearly underestimates the extent of this family form among most of the Polish regions, as well as in Serbia. On the other hand, it overestimates the proportion of the elderly in stem families of the majority of Albanian regions (the largest observed difference amounts to 12 percent).

In the case of joint families, the two definitions diverge much more strongly (Figure 3B). All of the new cases are now located to the right of the diagonal, indicating a general increase in the proportions of elderly in joint-family coresidence according to this new definition, compared to Ruggles' measures. The Polish–Lithuanian regions and Serbia, however, are more similar in both measures of living in joint families, whereas most Albanian regions display striking differences in this regard. In Poland–Lithuania, the highest increase in joint-family coresidence occurs in the region 11 S, which is characterized by the highest proportion of joint-family arrangements (increase from 33 to 45 percent). However, in many of the Albanian regions, the increases reach 20 and 30 percent, with a maximum of 40 percent in Elbasan-North. Overall, we see that the fit of Ruggles'
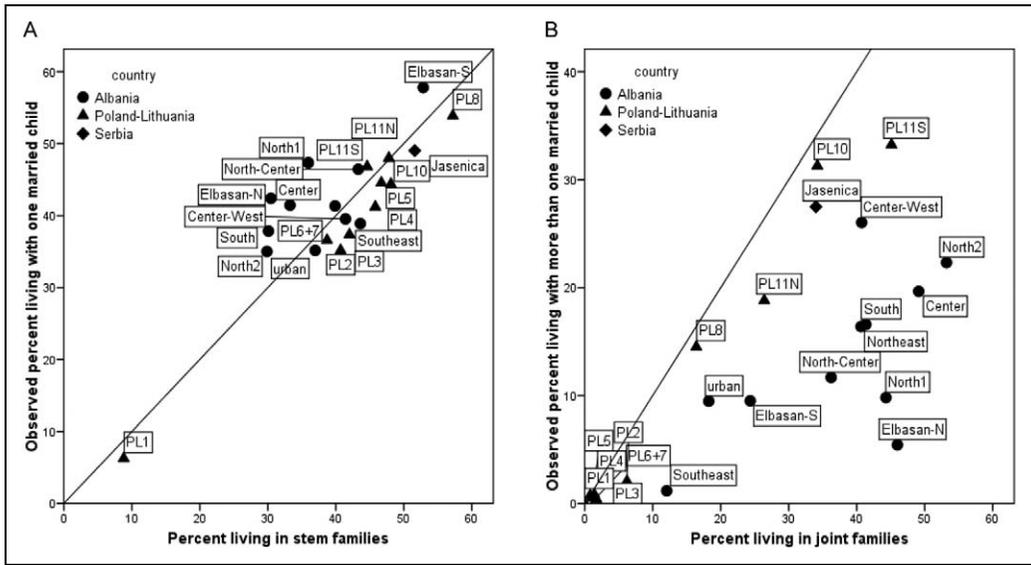
Figure 3. A, Percentage of elderly in stem families measured with Ruggles' and new definitions (59 census samples). B, Percentage of elderly in joint families measured with Ruggles' and new definitions (59 census samples).

Table 5. Percentage Changes in Living Arrangements Caused by Changing Definitions From Ruggles to the New Definition, based on Ruggles' Definition

Type of change	Albania	Poland–Lithuania	Serbia
Stem families becoming joint families	23.4	4.9	4.0
Other families becoming stem families	12.5	10.1	19.4
Other families becoming joint families	30.6	5.9	19.4

definition of joint families with the new definition is 80 percent for the Serbian data set, 78 percent for the Polish–Lithuanian data set, but only 37 percent for the Albanian data set. The new definition proposed here would increase the analytic power of the used models, especially in the case of the Albanian data, but probably also for other countries displaying high incidence rates of joint-family coresidence. This would also decrease possible biases because the fit between these two measures in these regional data differs from a mere 10 percent to 95 percent.

These new definitions have tended to show increases in the complexity of the living arrangements of the aged and have never shown a decrease (Table 5). All of those who were living in joint-family arrangements according to Ruggles' definition remained in the same family constellations, but some moved from stem to joint families (in Albania, almost one in four of those defined as living in stem families according to Ruggles). In addition, a fraction of those elderly people who were classified by Ruggles as living in neither stem- nor joint-family arrangements were reclassified as members of stem or joint families according to the new definition (again, especially in Albania). The reasons for the increase in joint families in the new definition are coresidence arrangements with married or widowed nephews, brothers, or cousins. In Albania, more people moved from stem to joint families than from other to stem families, which therefore led to a decrease in the share of elderly people living in stem families (according to the new second definition).[39]

Another problem with Ruggles' definition of stem-family coresidence is that it does not distinguish between "true" stem-family arrangements (i.e., resulting from stem-family-specific household

formation rules and life cycle) and those which might result from the "reincorporation" of the elderly into their children's homes after they become unable to care for themselves.[40] Ruggles argued that this was not a problem in his data. He presented a figure showing that in nineteenth-century Canada and the United States, as well as in historical Northern Europe, most multigenerational households were headed by the older generation.[41] Unfortunately, this reasoning does not fully apply to these historical data, no matter which definition of stem family is used, Ruggles' or the new own. In historical Western Poland, 83 percent of the elderly living in stem-family arrangements, as defined by Ruggles, were not heading households. This number drops substantially in the Polish eastern regions. However, even in these areas, almost 32 percent of the aged were not household heads. Both in Serbia and in Albania, around 64 percent of the aged in stem families were not household heads. Distinguishing between two qualitatively different types of coresidence within the "stem-family group" is not easy. It would require additional conceptual work and further exploration of the data, which is beyond the scope of this article.

Conclusions

At the outset of this article, the authors suggested that the limits of IPUMS samples make it impossible to determine the true prevalence of joint families in a broader European context. The inclusion of historical data sets from Eastern and Southeastern Europe into the analysis has indeed revealed the existence of societies with a high proportion of elderly people living in stem- or joint-family arrangements. The rates of joint-family coresidence among the aged were much higher in these past societies than in any other European country in Ruggles' data. These findings seem to suggest that not all Europeans in all historical periods had an "aversion" to living in joint families.

This contribution certainly is not all encompassing with regard to delineating joint-family zones in Europe. Since the works of Milovan Gavazzi and Michael Mitterauer, we have had quite a good sense of when and where in the history of European peoples the joint family made an appearance, and that these regions were by no means confined to Belarus, Ukraine, and Albania.[42] Laterally extended families have been present in such diverse places as fifteenth-century Tuscany, early modern France[43] nineteenth-century Northern Italy[44] Finland[45] and, of course, in the paradigmatic Russian case.[46] Traces of domestic groups structured along joint-family principles were also found to be present among early medieval Germanic societies.[47] Apart from Albania, joint-family households appear to have been a common form of household organization in some other areas of the Balkans in the past.[48]

If, then, traces of joint-family coresidence emerge from the results and literature presented in this article, what difference does it make? If not all Europeans were averse to living in joint families, then it appears that more conscious efforts to understand what constituted the "European pattern" should be made. In order to examine to what extent joint-family coresidence might have been a part (even if only a minor one) of the European repertoire of family systems, the expansion of research into broader European regions and different historical periods might be necessary. New initiatives in data infrastructures, most notably the continuing extensions of the IPUMS and NAPP collections, are very promising in this regard.

This analysis of family forms in the vast Eastern European territories challenges at least some of the assumptions made in the older literature dealing with spatial aspects of European family systems.[49] Both the Polish–Lithuanian and Albanian data sets revealed striking internal variation in the propensity to live in more complex domestic groups. These findings regarding the diversity of family forms in historical Eastern Europe should finally free us from simplistic views of the continent's familial history and particularly from the notion of a "dividing line".[50] It is also likely that a certain level of variation in residence patterns might have featured in other European countries as well.[51] Up

to this point, tackling this problem using integrated and harmonized census microdata series has not yet been attempted.

The results of this analysis demonstrate that, while Ruggles' definition of stem families is consistent with the stem-family arrangements in these data, his definition of joint families does not cover a major part of the joint-family arrangements in those new data sets, especially in the Albanian regions. As comparative research on residence patterns is likely to grow worldwide, future researchers working with new culture-specific data sets will have to work out properly contextualized definitions of complex family arrangements. Only then can we prevent biases from interfering with these efforts to investigate the degree to which adults related by blood, marriage, or adoption live together.

Explaining why there are the differences in the rates of joint-family arrangements in different places and at different points in time remains a challenge. This analysis confirmed Ruggles' earlier assertions that the observed frequency of joint-family arrangements cannot be fully accounted for by referring to measures of economic conditions and demographic structures alone. The regions with the highest proportions of joint-family arrangements in these data sets have higher observed percentages than those that were predicted. This suggests that not all relevant information has been included in the model, and that we should think about adding more variables. Nevertheless, the authors think that an ''aversion'' to one form of domestic group structure or another was hardly the only factor, or even the most decisive factor affecting the observed complexity of family patterns, at least across historic Eastern Europe. While it is likely that cultural influences played some role in fostering the complexity of residential arrangements, many differences in the observed patterns of joint-family patterns across Europe could be satisfactorily explained by a mixture of economic, ecological, and institutional factors, or, better, constraints.[52] The voluminous research on household complexity in the Balkans provides a sufficient number of examples of this kind of reasoning.[53] There is also abundant evidence suggesting that Eastern European landlords or other powerful authorities were customarily concerned with their subjects' residential arrangements. They often required the latter to be modified, and usually had the power to implement their wishes.[54] It has been shown that the interference of landlords led to the formation of a much greater number of complex households than would have been the case if peasants had been free from feudal or military obligations.[55] Cultural differences, ecotype specificities, and political economic and demographic factors might be the pieces of a puzzle that has yet to be put together in the realm of studies of family systems.

Notes

1. M. King and S. H. Preston. "Who Lives with Whom? Individual versus Household Measures," *Journal of Family History* 15, no. 2 (1990): 117–32.
2. P. Laslett, "Introduction," in *Household and Family in Past Time*, ed. P. Laslett and R. Wall (Cambridge: Cambridge University Press,1972), 1–89; idem, "Family, Kinship and Collectivity as Systems of Support in Preindustrial Europe: A Consideration of the 'nuclear-hardship' hypothesis," *Continuity and Change* 3, no. 2 (1988): 152–75; M. Cain, "Welfare Institutions in Comparative Perspective: The Fate of the Elderly in Contemporary South Asia and Pre-Industrial Western Europe," in *Life, Death, and the Elderly: Historical Perspectives*, eds. Margareth Pelling and Richard M. Smith (London: Routledge, 1991), 222–43; M. Das Gupta, "Kinship systems and demographic regimes," in *Anthropological Demography: Toward a New Synthesis*, eds. D. I. Kertzer and T. Fricke (Chicago: University of Chicago Press, 1997), 36–52; G. W. Skinner, "Family Systems and Demographic Processes," in *Anthropological Demography*, 53–95; T. Bengtsson, C. Campbell, and J. Z. Lee, *Life Under Pressure: Mortality and Living Standards in Europe and Asia, 1700-1900* (Cambridge, MA: MIT Press, 2004).

3. S. Ruggles, "Reconsidering the Northwest European Family System: Living Arrangements of the Aged in Comparative Historical Perspective," *Population and Development Review* 35, no. 2 (2009): 249–73; idem, "Stem Families and Joint Families in Comparative Historical Perspective," *Population and Development Review* 36, no. 3 (2010): 563–77.

4. S. Ruggles, "Stem Families and Joint Families." 564, 574. Ruggles' usage of the term "Europe" is not very consistent throughout the article. While he was careful in restricting its geographical scope to the northwestern part of the continent in some points in his article, in others he referred to Europe seemingly in its entirety. While this may have been meant to represent broader European dimensions or was intended as a shorthand for denoting specifically Western European phenomena, it nonetheless creates potential confusion about what should be considered as belonging to the "European repertoire" of family characteristics. Comp. M. Todorova, "On the Epistemological Value of Family Models: The Balkans within the European Pattern," in *Family History Revisited. Comparative Aspects*, eds. R. Wall, T. K. Hareven, and J. Ehmer (Newark: University of Delaware Press, 2001), 242–56.

5. S. Ruggles, "Reconsidering the Northwest European Family System."

6. S. Ruggles, "Stem Families and Joint Families."

7. S. Ruggles, "Stem Families and Joint Families." 574.

8. Ibid.

9. The database development was supported by the Marie Curie Intra-European Fellowship project (FP6-2002-Mobility-5, Proposal No. 515065) at the Cambridge Group for the History of Population and Social Structure, Cambridge, UK, 2006–2008.

10. M. Szołtysek and K. Rzemieniecki, "Between 'traditional' collectivity and 'modern' individuality: An Atomistic Perspective on Family and Household Astride the Hajnal's Line (Upper Silesia and Great Poland at the end of the eighteenth century)," *Historical Social Research* 30 (2005): 130–70; M. Szołtysek, "Three Kinds of Preindustrial Household Formation Systems in Historical Eastern: Challenge to Spatial Patterns of the European Family," *The History of the Family* 13, no. 3 (2008): 223–57; idem, "Rethinking Eastern Europe: Household Formation Patterns in the Polish-Lithuanian Commonwealth and European Family Systems," *Continuity and Change* 23 (2008): 389–427; idem, "Life Cycle Service and Family Systems in the Rural Countryside: A Lesson from Historical East-Central Europe," *Annales de Démographie Historique* 1 (2009): 53–94; M. Szołtysek and B. Zuber-Goldstein, "Historical Family Systems and the Great European Divide: The Invention of the Slavic East," *Demográfia: English Edition* 52, no. 5 (2010): 5–47.

11. J. M. Halpern, *A Serbian Village* (New York: Columbia University Press,1958); idem, "Town and countryside in Serbia in the nineteenth century: social and household structure as reflected in the census of 1863," in *Household and Family in Past Times*, 401–427.

12. Državopis Srbije/Statistique de la Serbie, 1865, vol. 2, Beograd; Državopis Srbije/Statistique de la Serbie, 1889, vol. 16, Beograd.

13. S. Gruber, "Auf der Suche nach serbischen Lebensläufen des 19. Jahrhunderts," *Anzeiger für Slavische Philologie* XXXI (2003): 163–78; idem, *Lebensläufe und Haushaltsformen auf dem Balkan: das serbische Jasenica im 19. Jahrhundert* (unpublished doctoral thesis, Karl-Franzens-Universität Graz, 2004); idem, "Occupational Migration in Albania in the Beginning of the 20th Century," in *Humanities, Computers and Cultural Heritage: Proceedings of the xvith international conference of the Association for History and Computing* (Amsterdam, 2005), 136–42; idem, "Household structures in urban Albania in 1918," in *Urban Household and Family in Twentieth Century East and South-East Europe*, eds. G. Kera and G. Kessler (Amsterdam: Elsevier), 138–51; idem, "Household Formation and Marriage: Different Patterns in Serbia and Albania?," in *Families in Europe between the 19th and 21st Centuries: From the Traditional Model to the Contemporary PACS*, eds. A. Fauve-Chamoux and I. Bolovan, (Cluj-Napoca: Presa Universitară Clujeană, 2009), 229–47.

14. F. Seiner, *Ergebnisse der Volkszählung in Albanien in dem von den österr.-ungar. Truppen 1916-1918 besetzten Gebiete* (Wien: Hölder-Pichler-Tempsky, 1922 [Schriften der Balkankommission, Linguistische Abteilung 13]), 5.

15. F. Seiner, *Ergebnisse der Volkszählung in Albanien*. The census material is still stored in the archives of the Austrian Academy of Sciences in Vienna. The research project "The 1918 Albanian Population Census: Data Entry and Basic Analyses" (http://www-gewi.uni-graz.at/seiner/index.html) was funded by the Austrian Science Fund and was aimed at translating the data into a machine-readable format.

16. M. Palairet, *The Balkan Economies c. 1800-1914: Evolution without Development* (Cambridge: Cambridge University Press, 1997), 94.

17. H. Sundhaussen, *Historische Statistik Serbiens 1834-1914. Mit europäischen Vergleichsdaten* (München: Oldenbourg, 1989), 235, 261; idem, *Geschichte Serbiens. 19. bis 21. Jahrhundert* (Wien: Böhlau, 2007), 177; S. Gruber, *Lebensläufe und Haushaltsformen auf dem Balkan*, 181 ff.

18. J. L. Sklar, "The Role of Marriage Behaviour in the Demographic Transition: The Case of Eastern Europe Around 1900," *Population Studies* 28, no. 2 (1974): 231–47.

19. S. Fogelson, *Z badań nad demografia Polesia i Wołynia* (Warszawa: Instytut badań Spraw Narodowościowych, 1938).

20. L. K. Berkner, "Household Arithmetic: A Note," *Journal of Family History* 2, no. 2 (1977): 159–63; S. Ruggles, "Availability of Kin and the Demography of Historical Family Structure," *Historical Methods* 19 (1986): 93–102; idem, *Prolonged Connections: The Rise of the Extended Family in Nineteenth-Century England and America* (Madison: University of Wisconsin Press, 1987); idem, "Family Demography and Family History: Problems and Prospects," *Historical Methods* 23 (1990): 22–30; idem, "Reconsidering the Northwest European Family System"; M. King and S. H. Preston, "Who Lives with Whom"?; M. King, "All in the Family? The Incompatibility and Reconciliation of Family Demography and Family History," *Historical Methods* 23 (1990): 32–40.

21. S. Ruggles, "Reconsidering the Northwest European Family System" 252ff.

22. S. Ruggles, "Stem Families and Joint Families."

23. S. Ruggles, "Stem Families and Joint Families." 566. All of these measures are designed to assess living arrangements through family relationships only among people coresiding in the same household.

24. S. Ruggles, "Reconsidering the Northwest European Family System"; idem, "Stem Families and Joint Families. Wherever it was necessary, the same standard population is used as Ruggles did, which was the average across all census samples originally used in his article.

25. For an explanation, see M. Szołtysek "Life cycle service and family systems."

26. J. Hajnal, "Two kinds of preindustrial household formation system," *Population and Development Review* 8, no. 3 (1982): 449–94.

27. Unfortunately, Ruggles' data set does not have comparable information from Germany or Scandinavian countries from the twentieth century.

28. P. E. Mosley, "The Distribution of the Zadruga within Southeastern Europe," in Communal Families in the Balkans: The Zadruga, eds. R. F. Byrnes, L. Schapiro, and P. E. Mosley (Notre Dame: University of Notre Dame Press, 1976), 58–69, 60–68; M. Todorova, *Balkan Family Structure and the European Pattern. Demographic Developments in Ottoman Bulgaria* (Washington, DC: American University Press, 1993), 149; M. Szołtysek, "Three Kinds of Preindustrial Household Formation Systems"; idem, "Rethinking Eastern Europe."

29. S. Ruggles, "Reconsidering the Northwest European Family System." 258.

30. S. Ruggles, "Stem Families and Joint Families." 572.

31. M. Szołtysek, "Central European household and family systems, and the "Hajnal-Mitterauer" line: the parish of Bujakow (18th-19th centuries)," *History of the Family* 12 (2007): 19–42.

32. In practice, this led to a circumvention of the comparison of these Eastern European data with the data from Middle Eastern, African, and Asian countries (with the exception of Greece). Five out of six Polish western regions were now also excluded from the modeling.

33. S. Ruggles, "Stem Families and Joint Families." 265–66.

34. H. Rebel, "Peasant Stem Families in Early Modern Austria: Life Plans, Status Tactics, and the Grid of Inheritance." *Social Science History* 2, no. 3 (1978): 256–60; L. K. Berkner, "Inheritance, Land Tenure

and Peasant Family Structure: A German Regional Comparison," in *Family and Inheritance in Rural Western Europe, 1200-1700*, eds. J. Goody, J. Thirsk, and E. P. Thompson (Cambridge: University Press, 1976), 84–91; M. Verdon, "The Stem Family: Toward a General Theory," *Journal of Interdisciplinary History* 10, no. 1 (1979): 87–105; M. Cartier, "Nuclear Versus Quasi-Stem Families: The New Chinese Family Model," *Journal of Family History* 20, no. 3 (1995): 307–27; O. Saito, "Two Kinds of Stem Family System? Traditional Japan and Europe Compared," *Continuity and Change* 13, no. 1 (1998): 167–86; also D. I. Kertzer, "Toward a Historical Demography of Aging," in *Aging in the Past: Demography, Society, and Old Age*, eds. D. I. Kertzer and P. Laslett (Berkeley: University of California Press, 1995), 377; recently J. Ehmer, "House and the Stem Family in Austria," *The Stem Family in Eurasian Perspective*, eds. A. Fauve-Chamoux and E. Ochiai (Bern: Peter Lang, 2009), 46–64; A. Fauve-Chamoux, and E. Ochiai, "Introduction," in *The Stem Family in Eurasian Perspective*, 1–50.

35. S. Ruggles, "Availability of Kin"; E. A. Hammel, "Demographic Constraints on the Formation of Traditional Balkan Households," *Dumbarton Oaks Papers* 44 (1990): 173–86.

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39. The authors assessed the impact of these two definitions of joint families on the data files used by Ruggles and found only minor effects. These findings are in clear contrast to those from the Albanian data and thus demand an explanation. This explanation can be provided by the proportion of lateral kin within the population, that is, relatives who are not descendents or ancestors (including their spouses) of the heads of households or their spouses. This proportion was 26.7 percent in the Albanian census of 1918, 18.9 percent in the Serbian sample, and 17.0 and 13.0 percent in regions 11N and 11S of Poland–Lithuania. In the IPUMS-International data files, only two countries (Ghana 2000 and Guinea 1996) have rates similar to these (21.8 and 17.6 percent, respectively). Most non-European countries have rates of up to 5 percent. If we consider only the married population, that is, the population who are responsible for creating additional joint families, the percentages are lower, at 19.6 percent in Albania, 14.6 percent in Serbia, and 16.6 and 9.5 percent in two regions of historical Poland. The IPUMSInternational data files contain only three countries with shares of at least 5 percent: Ghana 2000 with 14.5 percent, Guinea 1996 with 10.1 percent, and Iraq 1997 with 5.0 percent. Only in these countries are some major changes due to different definitions of joint families possible. Iraq 1997 is actually the case with the highest proportion of joint families in Ruggles' article and could have had even higher proportions according to the new definition. But the following countries (Vietnam and China) have a share of 1 percent or less of lateral kin among the married population, and thus no increase in joint families would have been possible. The definitional difference matters only for populations with high proportions of lateral kin in the households, which are almost absent in most contemporary populations. The only regions where higher proportions of these kin have been found are sub-Saharan Africa and the Middle East. Historical populations, on the other hand, can have quite high proportions of lateral kin incorporated into households. The authors' conclusion is that the differences between these two definitions of joint families do not matter very much for the majority of the populations currently covered by IPUMSInternational and NAPP, but that they may matter upon the inclusion of more historical data, as well as of census samples from African societies in the future.

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Bios

Siegfried Gruber finished his PhD in history and European ethnology at the University of Graz (Austria), in 2004. His major research interests are household structures and historical demography in Europe, especially Southeastern Europe. He is now a research scientist at the Max Planck Institute for Demographic Research in Rostock (Germany), where he is coordinating the MOSAIC project. His recent publications include eight coauthored chapters in *Family, Kinship and State in Contemporary Europe*, 3 vols., ed. Patrick Heady (Frankfurt/New York, 2010), and (with M. Szołtysek and R. Scholz) "Real and Synthetic Household Populations and Their Analysis: An Example of Early Historical Census Microdata (Rostock in 1819)," *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 44:2, 107–113.

Mikołaj Szołtysek (Ph.D.) specializes in family history and historical demography of Eastern Central Europe. After being a Marie-Curie Fellow at the Cambridge Group for the History of Population and Social Structure (2006–2008), he joined the Max Planck Institute for Demographic Research in Rostock (Germany), where he currently works as a research scientist and deputy head of the Laboratory of Historical Demography. He published, among others, in *The History of the Family*, *Continuity and Change* and Annales de démographie historique. *His most recent publications include "The genealogy of Eastern European difference: an insider's view" (forthcoming in the* Journal of Comparative Family Studies*), and* (with S. Gruber et.al.), "Living arrangements and household formation in the crucible of social change: Rostock 1867–1900," forthcoming in Annales de démographie historique.