

MINNESOTA POPULATION CENTER



UNIVERSITY OF MINNESOTA

Working Paper Series

**Living Arrangements of the Aged in Comparative
Historical Perspective**

**Steven Ruggles
Minnesota Population Center
University of Minnesota**

April 2008

**Working Paper No. 2008-02
<https://doi.org/10.18128/MPC2008-02>**

Prepared for the European Social Science History Conference
Lisbon, February 27, 2008

Between the late nineteenth century and the 1960s, social theorists argued that economic development was inversely associated with complex family forms. The idea seems to have originated with Frédéric Le Play, who wrote in 1872 that stem families were disappearing “among the working class populations subject to the new manufacturing system of Western Europe” (Silver 1982: 260). Durkheim (1888) expanded on Le Play’s interpretation, stressing the loss of specialized functions of the family and weakening of kin ties with the growth of social differentiation (Lamanna 2002: 61). Burgess (1916) generalized the theory that the nuclear family emerged as a consequence of industrialization, and by the middle of the twentieth century, the idea that simple nuclear families were functionally adapted to industrial society became a fundamental tenet of sociological thought (Ogburn 1933; Davis 1941; Parsons 1944). Goode (1963: 6), reflecting that consensus, wrote that “wherever the economic system expands through industrialization . . . extended kinship ties weaken, lineage patterns dissolve, and a trend toward some form of the conjugal system generally begins to appear.”

Policy analysts discussing changes in the living arrangements of the aged in the first half of the twentieth century stressed the importance of the declining importance of agriculture and the rise of industrial wage labor. The creators of the Social Security system—the landmark U.S. old age support program, adopted in 1936—routinely justified the need for assistance in terms of the decline of farming and the flight of the younger generation to the cities (Eliot 1961; Clague 1961; Brown 1969; *Helvering v Davis* 301 U.S. 619 [1937]). Mid-twentieth century literature on aging frequently raised the same points to explain the increasing tendency for the aged to reside alone (e.g. Burgess 1960; Cowgill 1974; Nimkoff 1962).

A revisionist paradigm emerged in the 1960s. Laslett and Harrison (1963) discovered that only a tenth of households in the seventeenth-century village of Clayworth included extended

kin—a fraction almost identical to that reported by the 1961 census of England and Wales. Laslett and his colleagues soon demonstrated that Clayworth was not an anomaly; there was similar evidence for many other pre-industrial villages (Laslett 1965, 1972). Over the next two decades, Laslett's followers elaborated a theory that Northwestern Europe and North America had, from a very early date, a unique family system characterized by nuclear family structure, neolocal late marriage, and a high proportion never marrying (Hajnal 1982; Laslett 1983; Reher 1998).

Proponents of the exceptionalism theory argue that that in Northwest Europe and North America—especially England and its colonies—children universally established new households when they got married, leaving the parents alone. According to this interpretation, elderly persons only resided with their children in cases of poverty or infirmity. In these circumstances, aged parents would move into their children's household because they could no longer support themselves (Hareven 1994, 1996; Kertzer 1995). Exceptionalism advocates maintain that these “weak family” patterns were unique to Northwest Europe and North America, and the rest of the world had “strong family” systems with much higher levels of intergenerational coresidence (Reher 1998; Hartman 2004; Hajnal 1982). Despite extensive criticism of the methods and measurements used by Laslett and his followers (e.g. Berkner 1972, 1975; Ruggles 1987, 1994, 2003), the hypothesis of Northwest European and North American exceptionalism remains the dominant interpretation (Thornton 2005).

This paper exploits a vast collection of newly-available census data from 92 censuses of 29 countries around the world between 1850 and 2006. My goal is to begin to systematically assess cross-temporal and cross-national variation in the living arrangements of the aged. The family patterns of the aged are relevant to the European exceptionalism hypothesis. All things

being equal, one would expect that populations with weak nuclear family systems and neolocal marriage would have a higher percentage of aged persons residing alone or with just their spouse than would strong-family societies in which stem families or joint families predominated.

Accordingly, I compare living arrangements of the aged in nineteenth-century Northwest Europe and North America with those of both developed countries and developing countries in the second half of the twentieth century, with a basic set of controls for economic development and demographic conditions.

The results suggest that nineteenth-century Northwest Europe and North America were not exceptional with respect to these measures. With simple controls for economic development, coresidence of the aged with kin and others in the historical data from the designated weak family areas appears very similar to that from strong family areas. This is not to say that the hypothesis of the Northwest European family pattern is entirely mistaken; it does appear, for example, that at least two of the countries examined did have significantly distinctive marriage patterns. Examination of the living arrangements of the aged, however, failed to uncover the exceptional families of historic Europe.

Data

This study is based on census microdata from three sources. The North Atlantic Population Project (NAPP 2006) provided data on from eight censuses of Canada, Great Britain, and Norway between 1865 and 1901. The Integrated Public Use Microdata Series (IPUMS-USA, Ruggles et al. 2008) provided data from the U.S. decennial censuses of 1850 through 2000, and the American Community Survey of 2006. The International Integrated Public Use Microdata Series (IPUMS-International, Minnesota Population Center 2007) provided data from 69

censuses of 25 countries dating from the period 1960 through 2002. Appendix A describes the characteristics of each census used in the analysis.

Even though the data span great distances of time and space, they provide closely comparable information on living arrangements. Definitions of household are generally cast in terms of shared meals or a shared physical structure. Family compounds in Africa composed of multiple physical dwellings are counted as single households, as long as they eat together or share common housekeeping, and have a single household head. One potentially significant difference is in enumeration rule: about half the censuses enumerated all persons present in the household on a designated census night (*de facto* rule), and the other half enumerated all persons who usually resided in the household (*de jure* rule). In places with high short-term labor migration, the *de facto* rule may capture somewhat less coresidence than the *de jure* rule.

Measures

Cross-sectional household-level measures of family complexity—such as those used by Laslett and his followers—are highly sensitive to demographic conditions, and therefore inappropriate for comparative analysis of populations with substantially differing demographic behavior. In populations characterized by high fertility and mortality, there are few elderly persons, and therefore only a small percentage of households have the potential to include elderly kin (Ruggles 2003). In societies that also have late marriage and long generations—such as those of historic Northwestern Europe—the potential for multigenerational households is especially constrained; in many populations, the average grandchild was born when the grandparents were in their mid-60s. Thus, the potential for multigenerational households in pre-industrial Northwestern Europe was sharply constrained (Ruggles 1987, 1994, 2003).

One can minimize the impact of demographic conditions on family structure by measuring coresidence from the perspective of the aged. The great advantage of this approach, compared with cross-sectional household-level measures, is that we need not account for variations in the availability of elderly kin. That does not, however, mean that demographic conditions have no impact on the living arrangements of the aged.¹ To minimize the confounding effects of variation in demographic behavior, this analysis focuses on two measures of living arrangements of the aged: percent residing alone or with spouse only, and percent residing with children age 18 or older.²

¹ In low-fertility populations the aged have fewer children with whom they can reside, and some demographers have suggested that this may help explain the low levels of intergenerational coresidence in economically developed countries (Kobrin 1976; Soldo 1981; Wister and Burch 1983). There is some evidence that the impact of fertility on coresidence is relatively small. In populations where coresidence of the aged is the norm, it appears to be insensitive to the number of surviving children (Knodel et al. 2000; Smith 1986; Ruggles 1994 see also Elman and Uhlenberg 1995); moreover, the net effects of fertility decline on long-term change in elderly coresidence with children in the United States were negligible (Kramarow 1995; Ruggles 1994, 1996). Although fertility decline does have implications for the living arrangements of the aged, the available evidence therefore generally suggests that the level of fertility is not the critical factor for coresidence, although as noted in the text fertility limitation has important implication for the age of the children.

² Two of the most widely-used measures of the living arrangements of the elderly are percent living alone and percent living with children. Both of these measures are sensitive to changing demographic conditions, and should be modified to maximize comparability. In populations without conscious fertility limitation, women bear children late in life. In many of those populations, husbands tend to be significantly older than their wives. Accordingly, in such societies, men in their late sixties often have minor children still living at home. This is not a residence decision; the children are coresiding with their elderly fathers only because they are not yet old enough to leave home. In low-fertility societies with early termination of childbearing, this is unlikely to occur, especially since most such populations tend to have narrower age gaps between spouses. Accordingly, to appropriately compare intergenerational coresidence of the aged across countries with differing patterns of fertility limitation, it is important to exclude residence with minor children.

The percentage of elderly living alone is influenced by patterns of mortality and nuptiality. In all populations, the overwhelming majority of currently-married elderly reside with their spouse. The availability of a spouse is affected by a variety of demographic factors such as celibacy, age intervals between spouses, and mortality. In general, developing countries have significantly lower proportions of aged with surviving spouses than do developed countries, and

In theory, one would expect that the percentage residing with adult children should be a better indicator of the Northwest European family pattern than would the percentage residing alone or with spouse only. In practice, however, there may be little advantage to the direct measure of coresidence; it is more complicated to construct the variable on residence with adult children, and it could be subject to greater measurement error because of variations among the censuses in variable coding and question wording.

The analysis measures economic development as the percentage of men age 18 to 64 engaged in agricultural work. Agricultural employment is virtually the only economic measure consistently available for every dataset under analysis, but it is a key measure. Elsewhere, I have argued that agricultural employment of the younger generation was the key determinant of changes in intergenerational coresidence in the United States (Ruggles 2007).

I also assessed the impact of two key demographic measures: the percent of the population aged 65 or older, and the percentage of each sex ever married at age 45-54. The percent of persons aged 65 or older is closely inversely correlated with fertility and mortality levels: in populations with high fertility and mortality, the percentage of elderly persons is low. Some demographers have also suggested that a high percentage of elderly in the population also may undermine the norm of intergenerational coresidence (Levy 1965:49; Kobrin 1976:136; cf. Burch 1967; Ruggles 1987). The percent ever marrying is relevant because celibacy directly affects the availability of kin for coresidence, and it is relevant in this context because non-marriage was fairly high in some of the countries of Northwestern Europe.

they therefore have less opportunity to reside alone. Accordingly, instead of measuring the percentage of elderly residing alone, I focus on the percentage residing alone or with a spouse only.

I treated each census as an independent observation. The measures used in the analysis are shown for each country in Appendix B.

Results

Figures 1 and 2 show the chronological pattern of living arrangements of the elderly across the 92 census samples. The top panel of each figure represents males, and the bottom panel females. The historical Northwest European and North American countries (Canada, Great Britain, Norway, and the United States) are identified individually, and the remaining countries are grouped into two categories—developed and developing—based on the World Bank (2007) classification.

The countries fall into distinct clusters. The developing countries, represented by blue dots, have a comparatively low percentage of elderly residing alone or with spouse only and a high percentage residing with adult children; the opposite is true for the developed countries, represented by green dots. All the nineteenth-century countries had a low percentage of elderly residing alone or spouse only. With respect to residence with adult children, however, there was more variation: Norway and Britain had considerably lower coresidence with adult children than did Canada and the United States. Note that we only have one observation from Canada on residence with adult children, because the earlier two census years lack the information on relationship to household head necessary to construct this variable. The United States—the only country for which we have a continuous series of data over the entire period—went from a very high coresidence in the nineteenth century to very low coresidence by the late twentieth century.

Figures 3 and 4 are parallel to Figures 1 and 2, except that instead of showing the chronological pattern of coresidence, the horizontal axis shows the percent of working-aged men

Figure 1. Percent of persons aged 65+ residing alone or with spouse only, by year of enumeration

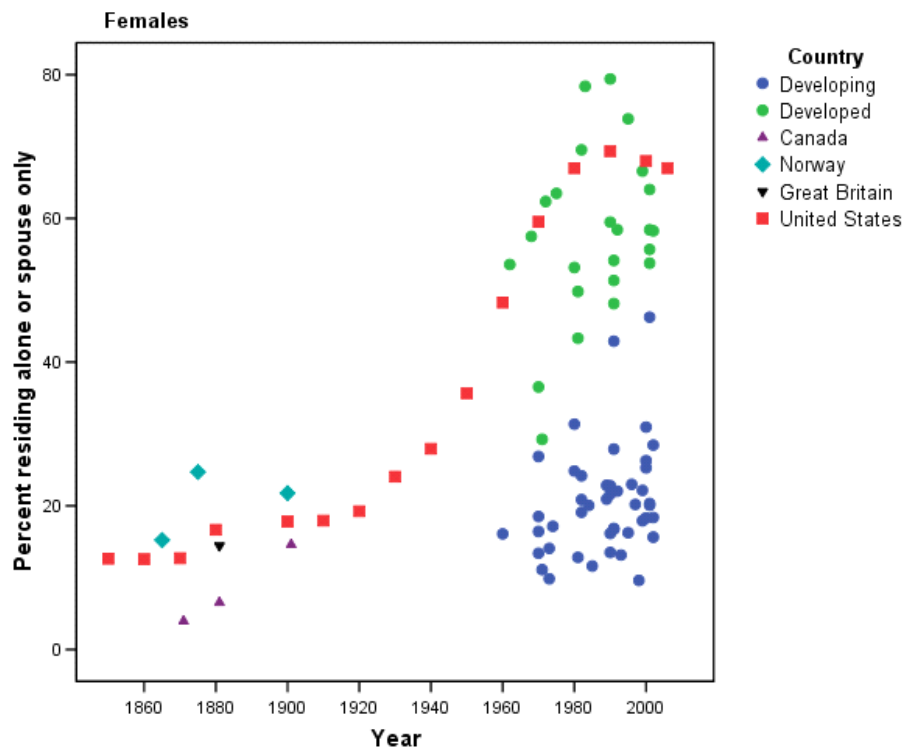
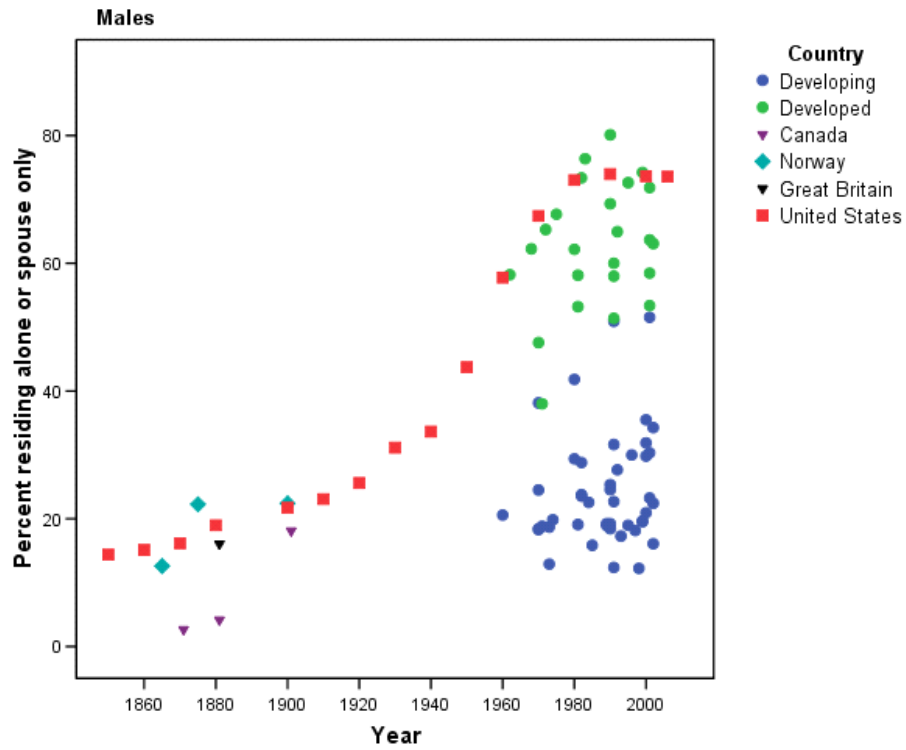


Figure 2. Percent of persons aged 65+ residing with adult child, by year of enumeration

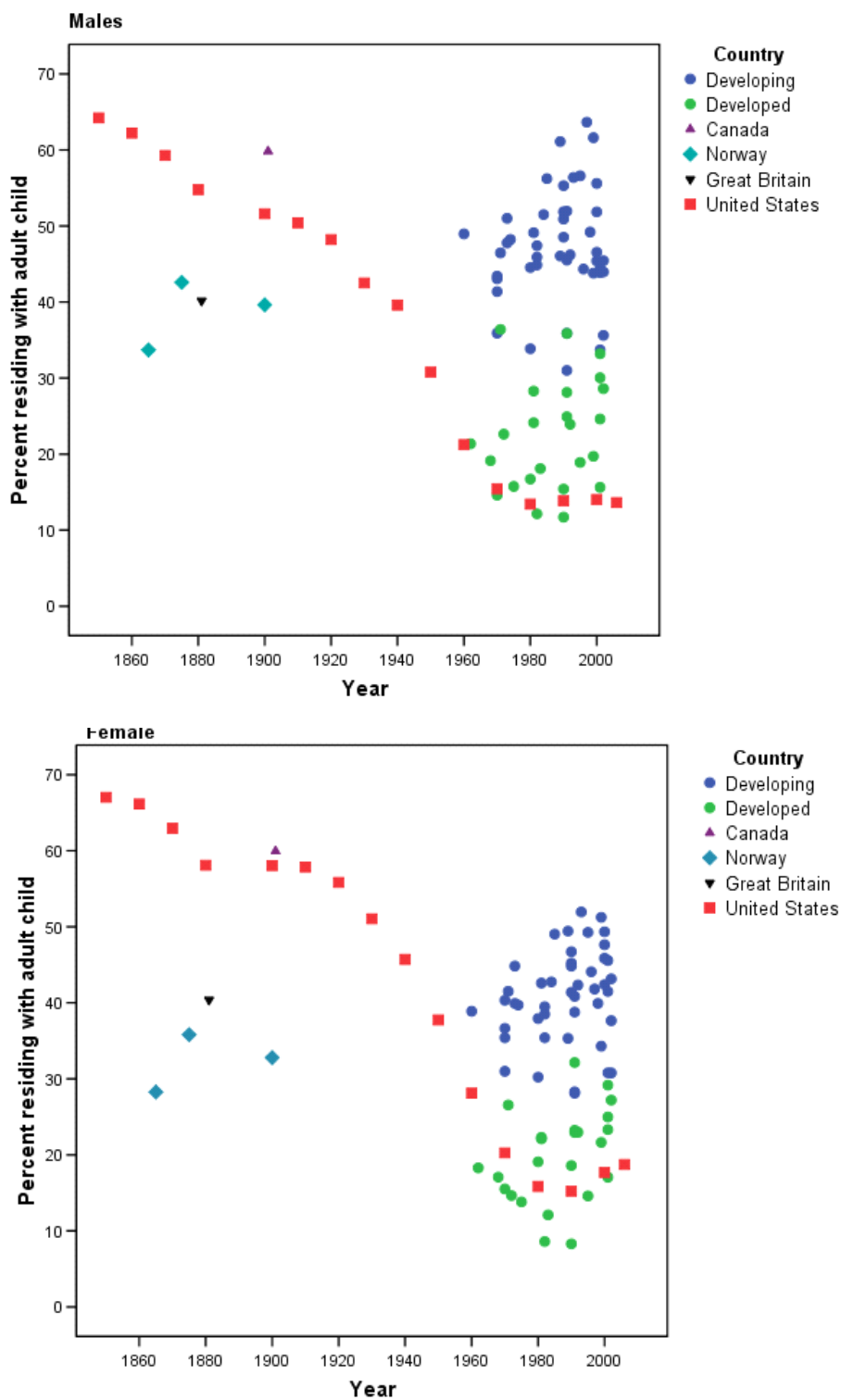


Figure 3. Percent of persons aged 65+ residing alone or with spouse only, by percent of males aged 18-64 employed in agriculture

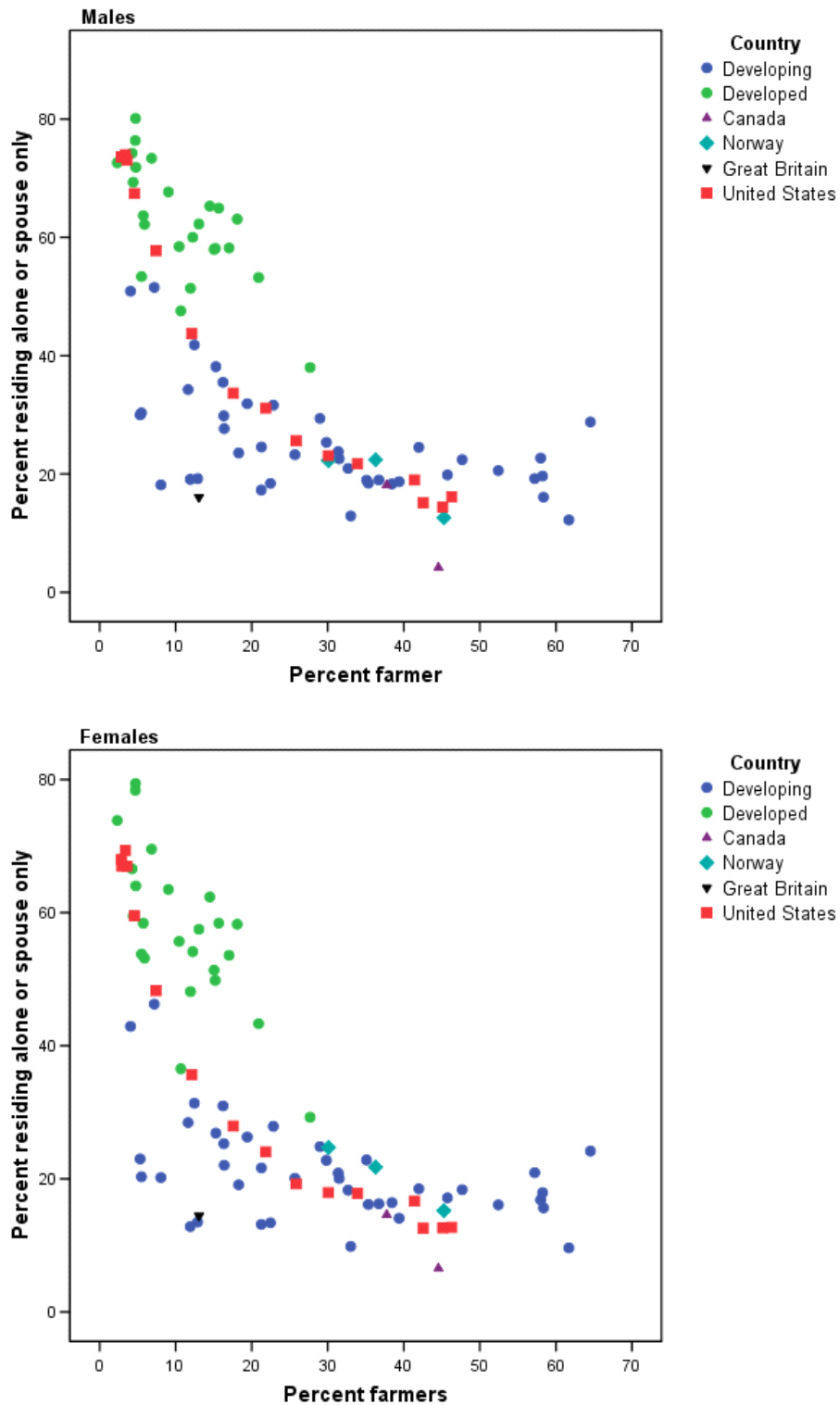
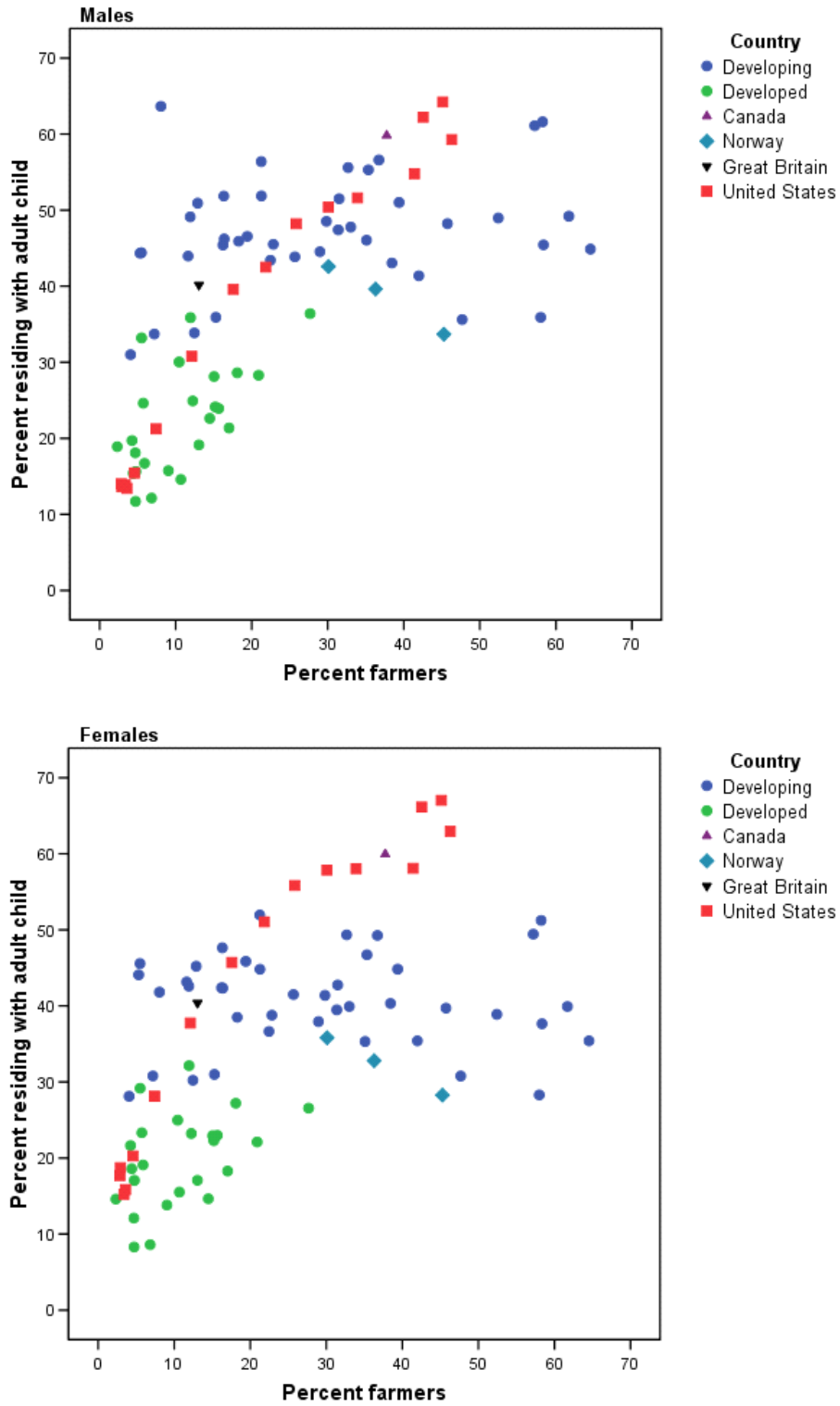


Figure 4. Percent of persons aged 65+ residing with adult child, by percent of males aged 18-64 employed in agriculture



engaged in agriculture. Figure 3 shows a striking inverse relationship between farming and residence alone or spouse only. There is little difference between the censuses from historical Northwestern Europe and North America and those from twentieth-century developing countries with a similar level of engagement in agriculture. If anything, the censuses of Great Britain in 1881 and Canada in 1871 suggest that living alone or with spouse only was actually somewhat rarer in those countries than it was in comparable late-twentieth century countries.³ This is not what one would expect for an exceptionally neolocal weak-family system.

The relationship of farming to residence with adult children, shown in Figure 4, is not as tight. The developed countries, Great Britain, Canada, and the United States seem to fit a linear relationship between agriculture and coresidence, but in Norway and the developing countries there does not appear to be a consistent pattern.⁴ The developing-country pattern is consistent with the findings of Ruggles and Heggeness (1998) that in many of these developing countries there was no consistent association between several measures of economic development and intergenerational coresidence.

Table 1 shows the results of Ordinary Least Squares regressions of farming and demographic measures on the measures of living arrangements of the aged. The results underscore the strong association of farming and family structure. When farming is considered by itself, the percentage of elderly living alone or spouse only declines almost 2.5% for every percentage point increase in the percentage of the percentage of working-age men in farming (models 1 and 5). The effect is smaller on coresidence with adult children (models 3 and 7), but it is still dramatic. Adding the demographic indicators—percent of the population age 65 or older

³ In Norway, I am concerned about the validity of the measure of agricultural employment, since it shows dramatic fluctuation between 1865 and 1900.

⁴ The Norwegian data show an unexpected substantial increase in coresidence between 1865 and 1875, and until it is verified I am inclined to discount the Norwegian coresidence evidence.

Table 1. OLS regressions of farming and demographic characteristics on living arrangements of the aged

MALES	Alone or Spouse Only				With Adult Child			
	Model 1		Model 2		Model 3		Model 4	
	B	Std. Error	B	Std. Error	B	Std. Error	B	Std. Error
Percent men 18-64 in farming	-2.49	0.29 ***	-1.47	0.23 ***	1.63	0.24 ***	0.92	0.22 ***
Farmers squared	0.03	0.00 ***	0.02	0.00 ***	-0.02	0.00 ***	-0.01	0.00 **
Percent aged 65+			6.79	0.80 ***			-4.87	0.76 ***
Percent of men married by 45-54			0.82	0.29 **			-0.12	0.28
Constant	73.80	3.41 ***	-37.89	26.62 ***	15.21	2.80 ***	53.04	25.36 *
Adjusted R Square	0.66		0.84		0.54		0.68	
N	87		84		86		83	

FEMALES	Alone or Spouse Only				With Adult Child			
	Model 5		Model 6		Model 7		Model 8	
	B	Std. Error	B	Std. Error	B	Std. Error	B	Std. Error
Percent men 18-64 in farming	-2.39	0.29 ***	-0.94	0.23 ***	1.55	0.25 ***	0.54	0.23 *
Farmers squared	0.03	0.00 ***	0.01	0.00 *	-0.02	0.00 ***	-0.01	0.00 *
Percent aged 65+			4.01	0.52 ***			-2.96	0.53 ***
Percent of men married by 45-54			1.22	0.24 ***			-0.43	0.25
Constant	67.45	3.45 ***	-79.63	21.83 ***	15.21	2.80 ***	79.81	22.02 **
Adjusted R Square	0.62		0.85		0.43		0.62	
N	87		84		86		83	

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

and percent of each sex never marrying—somewhat reduces the effect of farming but produces substantially better-fitting models.

Figures 5 and 6 plot the predicted percent of aged in each living arrangement against the observed percent, based on the full models (2, 4, 6, and 8). If Northwest European and North American families were truly distinctive, we would expect that the observed percentage residing alone or with spouse only would be substantially greater than the predicted percent; that is, those should fall significantly *below* the diagonal in Figure 5. The only nineteenth-century Northwest European or North American censuses that fall below the diagonal are two of the Norwegian censuses, and only one of those significantly deviates from the line. In Figure 6, we would expect countries conforming to an exceptionally neolocal nuclear family system to have less intergenerational coresidence than would be predicted, and therefore to fall *above* the diagonal. Again, among the nineteenth century observations only Norway appears to conform at all to the expected pattern; moreover, although all three Norwegian censuses are above the diagonal for both men and women, none of these cases can really be described as outliers.

Discussion

Goody (1996: 17) argued that the sharp distinction drawn by Hajnal (1982) and others between the Northwest European family and the rest of the world “overstresses the actual differences,” and “the data do not altogether justify such a sharp dichotomy.” The evidence on living arrangements of the aged tends to reinforce Goody’s interpretation. The living arrangements of the aged in nineteenth-century Great Britain, Canada, and the United States were similar to those of developing countries in the second half of the twentieth century that had a similar level of engagement in agriculture. By some measures, Norway had slightly lower coresidence than most developing countries with the same extent of farming, but as noted

Figure 5. Plot of predicted versus observed percent of persons aged 65+ residing alone or with spouse only

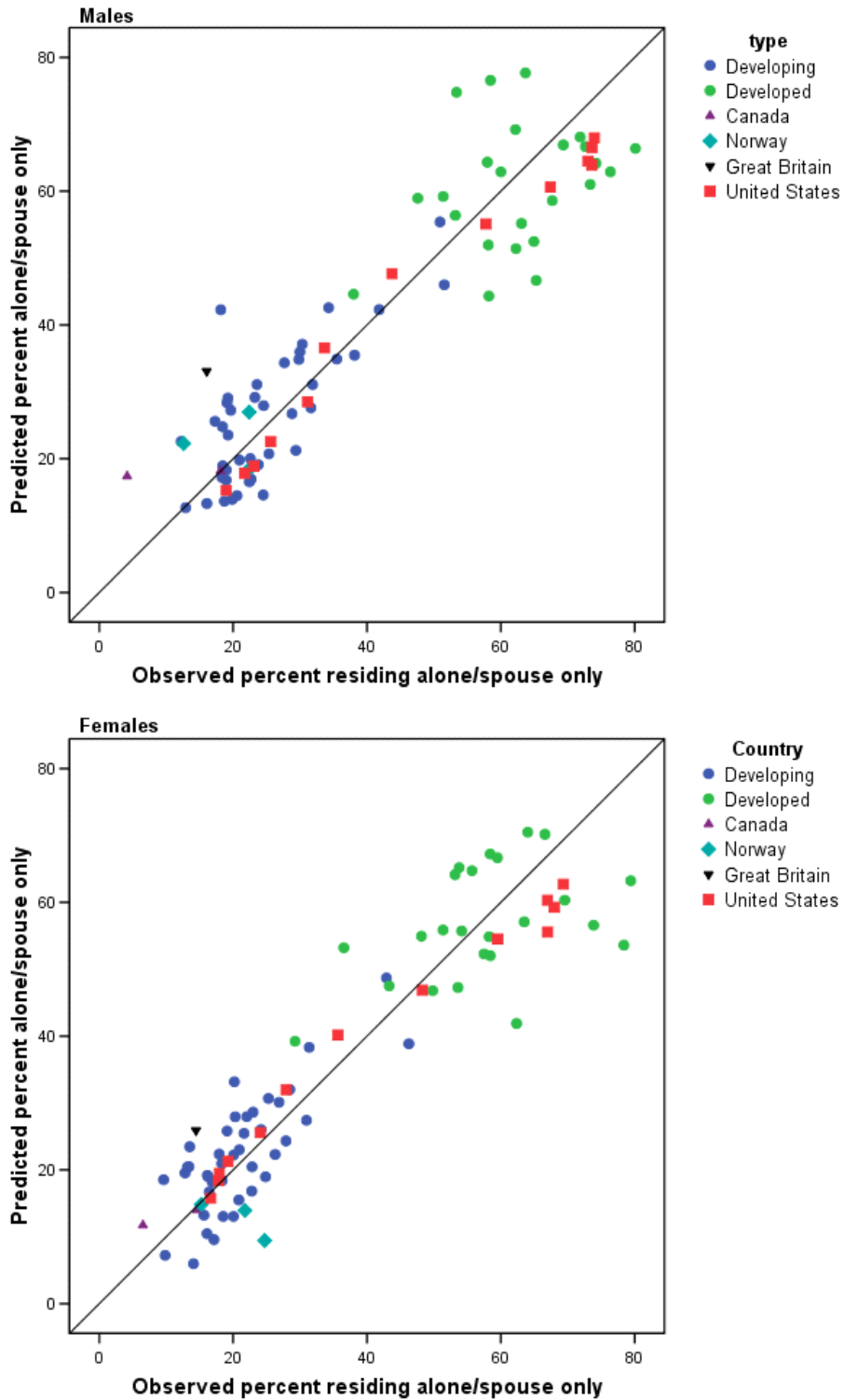
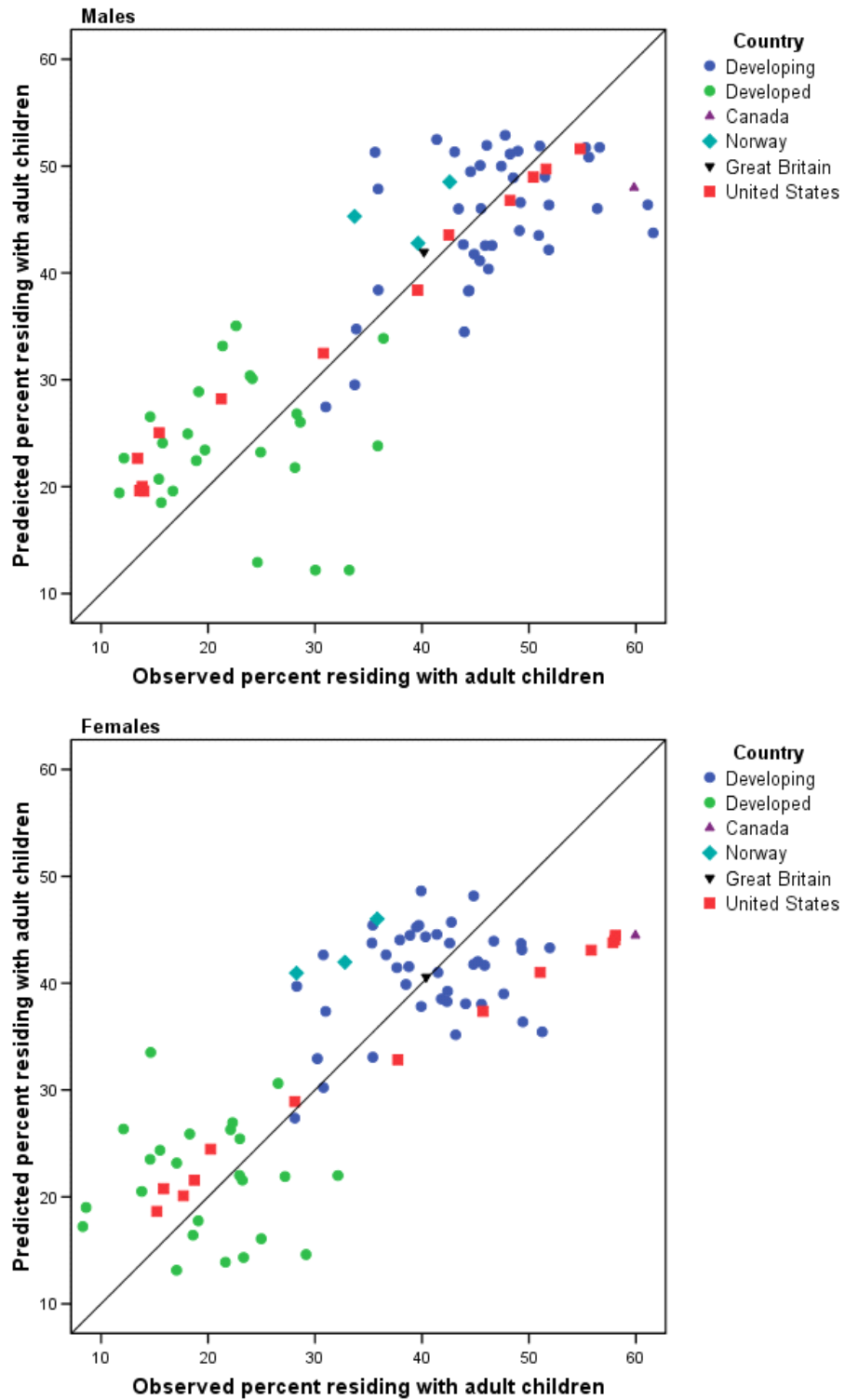


Figure 6. Plot of predicted versus observed percent of persons aged 65+ residing with adult children



it is also possible that I have some measurement problems with the Norwegian censuses. Even if the Norwegian data are correct, however, however, it would be more accurate to describe the family patterns of these countries as “typical” rather than as “exceptional.”

The argument of Laslett, Hajnal and others that preindustrial Northwest Europe was exceptional drew the comparison to the rest of the world at the time; no one compared preindustrial Europe to late-twentieth century developing countries. One way to rescue the hypothesis would be to imagine a scenario under which the less-developed countries of the world at some point in the distant past all had “strong” family systems, but by the second half of the twentieth century these had all weakened to the point that they appear identical to the “weak” family systems of nineteenth-century Northwestern Europe and North America. Such a scenario, however, seems unlikely. The best data we have suggests that there has been little change in coresidence in the least developed countries during the past several decades, so the weakening of the families of the developing world would have had to occur in the mid-twentieth century or earlier (Ruggles and Heggeness 2008).

There is another possible interpretation that could rescue the exceptionalism hypothesis. Perhaps, Europe really did have a unique system of neolocal marriage, but also had a unique system of “nuclear reincorporation” under which large numbers of elderly moved into their children’s homes when they became unable to care for themselves (Kertzer 1995). Under this scenario, even though the living arrangements of the elderly in nineteenth-century Northwest Europe appear identical to those in other parts of the world, they would still be distinctive because they were formed when dependent parents moved in with their children, rather than by children remaining in their parental home. I have argued elsewhere (Ruggles 2003, 2007) that there is compelling evidence contradicting this hypothesis in the United States. In Canada, Great

Britain, and Norway—like the United States and most other countries—the great majority of intergenerational families were headed by the older generation. This makes the nuclear reincorporation hypothesis strained at best; one would have to imagine that when the dependent elders moved in with their children, they would automatically assume the household headship.

I prefer the simplest and most obvious interpretation: the family system in Northwestern Europe and North America was essentially similar to that in the rest of the world.⁵ As in the rest of the world, when families had a farm, at least one child usually remained at home after reaching adulthood. Farmers who reached advanced ages could needed help with heavy work, and the younger generation eventually inherited the land. Growing commercialization and industrialization in the nineteenth century, however, meant that fewer families had farms. Moreover, young people were attracted off farms by the high wages and independence offered by jobs in large-scale commerce, manufacturing, and transportation. Thus, coresidence of the aged began to decline.⁶

⁵ I am referring to the argument about living arrangements only. The Northwest European marriage pattern is real, and is reinforced by the new census data. Age at marriage was very late in Norway. Among the twentieth-century developing countries included in this analysis, only South Africa had as late marriage as nineteenth-century Norway. Age at marriage was also comparatively late in nineteenth-century Canada and Great Britain, and celibacy was also relatively high in all three countries.

⁶ This argument, of course, is essentially identical to those of Le Play and the early twentieth-century sociologists and policy analysts summarized in the introduction.

Literature Cited

- Berkner, Lutz. 1972. "The Stem Family and the Developmental Cycle of the Peasant household: An Eighteenth century Austrian Example." *American Historical Review* 77: 398-418.
- Berkner, Lutz. 1975. "The Use and Misuse of Census Data in the Historical Study of Family Structure." *Journal of Interdisciplinary History* 5: 721-38.
- Brown, J. Douglas. 1969. *The Genesis of Social Security in America*. Princeton, N.J.: Industrial Relations Section, Princeton University.
- Burch, Thomas K. 1967. "The Size and Structure of Families: A Comparative Analysis of Census Data." *American Sociological Review* 32: 347-363.
- Burgess, Ernest W. 1916. *The Function of Socialization in Social Evolution*. Chicago: University of Chicago Press.
- _____. 1960. "Family Structure and Relationships." Pp. 271-298 in *Aging in Western Societies*, edited by Ernest W. Burgess. Chicago: University of Chicago Press.
- Clague, Ewan. 1961. "Factors Contributing to the Passage of the Social Security Act." Lecture delivered at a general staff meeting at the Social Security Administration Headquarters, Baltimore, Maryland on July 20, 1961. Available at <http://www.ssa.gov/history/officials.html>, retrieved January 18, 2007.
- Cowgill, Donald O. 1974. "The Aging of Populations and Societies." *Annals of the American Academy of Political and Social Science* 415: 1-18.
- Davis, Kingsley. 1941. "Family Structure and Functions." *American Sociological Review* 8 : 311-320.
- Durkheim, Émile. 1888. "Introduction à la sociologie de la famille," *Annales de la faculté du lettres du Bordeaux* 10: 257-282. Translated in Mark Traugott, *Émile Durkheim on Institutional Analysis*. Chicago: University of Chicago Press, 205-228.
- Eliot, Thomas A. 1961. "The Legal Background of the Social Security Act." Speech delivered at a general staff meeting at Social Security Administration Headquarters, Baltimore, Maryland, February 3, 1961. Available at <http://www.ssa.gov/history/officials.html>, retrieved January 18, 2007.
- Elman, Cheryl and Peter Uhlenberg. 1995. "Co-residence in the Early Twentieth Century: Elderly Women in the United States and their Children." *Population Studies* 49: 501-517.
- Goode, William J. 1963. *World Revolution and Family Patterns*. Glencoe Illinois: Free Press.
- Goody, Jack. 1996. "Comparing Family Systems in Europe and Asia: Are There Different Sets of Rules?" *Population and Development Review*, Vol. 22: 1-20.
- John Hajnal. 1982. "Two Kinds of Preindustrial Household Formation System." *Population and Development Review* 8: 449-494.
- Hareven, Tamara K. 1994. "Aging and Generational Relations: A Historical and Life Course Perspective." *Annual Review of Sociology* 20: 442.
- _____. 1996. "Introduction: Aging and Generational Relations over the Life Course." Pp. 1-12 in *Aging and Generational Relations over the Life Course: A Historical and Cross-Cultural Perspective*, edited by in Tamara K. Hareven. Berlin: de Gruyter. 1-12
- Hartman, Mary S. 2004. *The Household and the making of History: a Subversive View of the Western Past*. Cambridge: Cambridge University Press.
- Helvering v Davis*, 301 U.S. 619 1937.

- Kertzer, David 1995. "Toward a Historical Demography of Aging." Pp. 363-385 in *Aging in the Past: Demography, Society and Old Age*, edited by David Kertzer and Peter Laslett. Berkeley: University of California Press.
- Knodel, John, Jed Friedman, Truong Si Anh, and Bui The Cuong. 2000. "Intergenerational Exchanges in Vietnam: Family Size, Sex Composition, and the Location of Children." *Population Studies* 54: 89-104.
- Kobrin, Frances E. 1976. "The Fall in Household Size and the Rise of the Primary Individual in the United States." *Demography* 13:127-38.
- Kramarow, Ellen 1995. "Living Alone Among the Elderly in the United States: Historical Perspectives on Household Change." *Demography* 32: 335-352.
- Lamanna, Mary Ann. 2002. *Emile Durkheim on the Family*. Thousand Oakes, CA: Sage Press.
- Laslett, Peter and John Harrison, 1963. "Clayworth and Cogenhoe," in *Historical Essays 1600-1730: Presented to Davis Ogg* H.E. Bell and R.L. Ollard, eds. (London, 1963);
- Laslett, Peter. 1965. *The World We Have Lost* London: Methuen.
- _____. 1972. "Introduction: The History of the Family." Pp. 1-89 in *Household and Family in Past Time*, edited by in Peter Laslett and Richard Wall. Cambridge: Cambridge University Press.
- _____. 1983 Family and household as work group and kin group: Areas of traditional Europe compared. In: R. Wall and J. Robin, Editors, *Family forms in historic Europe*, Cambridge University Press, Cambridge (1983), pp. 513-563.
- Le Play, Frédéric. 1884. *L'organisation de la famille selon le vrai modèle signalé par l'histoire de toutes les races et de tous les temps* Third edition. Tours: A. Mame
- Levy, Marion. 1965. "Aspects of the Analysis of Family Structure." Pp. 1-63 in *Aspects of the Analysis of Family Structure*, by Ansley J. Coale, Lloyd J. Fallers, Marion J. Levy, Jr., David M. Schneider, and Silvan S. Tomkins. Princeton: Princeton University Press.
- Minnesota Population Center. 2007. *Integrated Public Use Microdata Series — International: Version 3.0*. Minneapolis: University of Minnesota.
- North Atlantic Population Project. 2006. *NAPP: Complete Count Microdata*. NAPP Version 1.0 [computer files]. Minneapolis, MN: Minnesota Population Center [distributor], 2006.
- Nimkoff, Meyer F. 1962. "Changing Family Relationships of Older People in the United States During the Last Fifty Years." Pp. 405-414 in *Social and Psychological Aspects of Aging*, edited by Clark Tibbitts and Wilma Donahue. New York: Columbia University Press.
- Ogburn, William E. 1933. "The Family and Its Functions." Pp. 661-708 in *Recent Social Trends in the United States: Report of the President's Research Committee on Social Trends*. New York: McGraw Hill.
- Parsons, Talcott. 1944. "The Social Structure of the Family" PP. 173-201 in Ruth N. Anshen, ed., *The Family : Its Function and Destiny*. New York : Harper.
- Reher, David Sven. 1998. Family Ties in Western Europe: Persistent Contrasts." *Population and Development Review*, Vol. 24, No. 2. (Jun., 1998), pp. 203-234.
- Ruggles, Steven. 1987. *Prolonged Connections: The Rise of the Extended Family in Nineteenth Century England and America* Madison, Wisconsin: University of Wisconsin Press.
- _____. 1994. "The Transformation of American Family Structure," *American Historical Review* 99: 103-128.
- _____. 1996. "Living Arrangements of the Elderly in America, 1880-1980." Pp. 254-271 in *Aging and Generational Relations Over the Life Course: A Historical and Cross-Cultural Perspective*, edited by Tamara K. Hareven. Berlin: de Gruyter.

- _____. 2003. "Multigenerational Families in Nineteenth-Century America," *Continuity and Change* 18: 139-165.
- _____. 2007. "The Decline of Intergenerational Coresidence in the United States, 1850 to 2000" *American Sociological Review* 72: 962-989.
- Ruggles, Steven and Misty Hegeness. 2008. "Intergenerational Coresidence in Developing Countries. Working Paper 2008-1, Minnesota Population Center.
- Ruggles, Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. 2008. *Integrated Public Use Microdata Series: Version 3.0* [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor].
- Silver, Catherine B., ed. 1982. *Frédéric Le Play on Family, Work, and Social Change*. Chicago: University of Chicago.
- Smith, Daniel Scott. 1986. "Accounting for Change in the Families of the Elderly in the United States, 1900-present," in David Van Tassel and Peter N. Stearns (eds.) *Old Age in a Bureaucratic Society: The Elderly, the Experts, and the State in American History*. Westport, CT: Greenwood.
- Soldo, Beth J. 1981. "The Living Arrangements of the Elderly in the Near Future." Pp. 491-512 in *Aging: Social Change*, edited by S. B. Kiesler, J.N. Morgan, and V. K. Oppenheimer. New York: Academic Press.
- Thornton, Arland. 2005. *Reading History Sideways: The Fallacy and Enduring Impact of the Developmental Paradigm on Family Life*. Chicago: University of Chicago Press.
- Wister, A.V. and Thomas K. Burch. 1983. "Fertility and Household Status of Older Women in Canada, 1921." *Canadian Studies in Population* 10: 1-13.
- World Bank. 2007. "World Development Indicators Online." Available online at <http://devdata.worldbank.org/dataonline/>, accessed 8/22/2007.

Appendix A. Characteristics of census samples included in the analysis

Country	Year	Sample Density (%)	Enumeration rule	N aged 65+	Total Sample Size
Argentina	1970	2	de facto	32,621	466,892
	1980	10	de facto	218,139	2,667,714
	1991	10	de facto	365,790	4,143,727
	2001	10	de facto	358,683	3,626,103
Belarus	1999	10	de facto	133,058	990,706
Brazil	1970	5	de jure *	158,348	4,953,759
	1980	5	de jure *	236,252	5,870,467
	1991	6	de jure	409,356	8,522,740
	2000	6	de jure	591,795	10,136,022
Cambodia	1998	10	de facto	39,659	1,141,254
Canada	1871	5	de facto	2,300	62,276
	1881	100	de facto	177,294	4,100,880
	1901	5	de facto	13,398	264,686
Chile	1970	10	de facto	45,020	890,481
	1982	10	de facto	66,260	1,133,062
	1992	10	de facto	87,830	1,335,055
	2002	10	de facto	122,205	1,513,914
China	1982		de jure	49,315	1,002,691
Colombia	1973	10	de facto	62,450	1,988,831
	1985	10	de jure	103,471	2,643,125
	1993	10	de jure	144,743	3,213,657
Costa Rica	1973	10	de jure	6,590	186,762
	1984	10	de jure	10,762	241,220
	2000	10	de jure	21,466	381,500
Ecuador	1974	10	unknown	24,792	648,678
	1982	10	de facto	32,163	806,834
	1990	10	de facto	42,048	966,234
France	1968	5	de jure	273,260	2,320,901
	1975	5	de jure	313,164	2,487,778
	1982	5	de jure	351,669	2,629,456
	1990	4	de jure	351,570	2,631,713
Great Britain	1881	100	de facto	1,380,431	29,636,256
Greece	1971	10	de facto	94,768	845,483
	1981	10	de facto	120,887	923,108
	1991	10	de facto	135,164	951,875
	2001	10	de facto	176,829	1,028,884
Hungary	1970	5	de jure	59,046	515,119
	1980	5	de facto	72,550	536,007
	1990	5	de facto	68,617	518,240
	2001	5	de facto	77,136	510,502
Israel	1972	10	de jure	22,375	315,608
	1983	10	de jure	35,983	403,474
	1995	10	de jure	55,130	556,365

Appendix A (continued). Characteristics of census samples included in the analysis

Country	Year	Sample Density (%)	Enumeration rule	N aged 65+	Total Sample Size
Kenya	1989	5	de facto	35,110	1,074,098
	1999	5	de facto	46,550	1,407,547
Mexico	1970	1	de jure	17,596	483,405
	1990	10	de jure	338,870	8,118,242
	2000	11	de jure	504,434	10,099,182
Norway	1865	100	de jure	114,084	1,684,480
	1875	2-100	de jure *	35,665	642,285
	1900	100	de jure *	176,672	2,294,599
Palestine	1997	10		8,845	259,191
Philippines	1990	10	de jure	204,270	6,013,913
	1995	10	de jure	240,974	6,864,758
	2000	10	de jure	284,488	7,417,810
Portugal	1981	5	de jure	56,261	492,289
	1991	5	de jure	67,478	491,755
	2001	5	de jure	84,894	517,026
Romania	1992	10	de jure	250,384	2,238,578
	2002	10	de jure	303,307	2,137,967
Rwanda	1991	10	de facto	23,301	742,918
	2002	10	de facto	24,164	843,392
Vietnam	1989	5	de jure	126,644	2,626,985
	1999	3	de jure	137,539	2,368,167
South Africa	1996	10	de facto	173,096	3,621,164
	2001	10	de facto	184,481	3,725,655
Spain	1991	5	de facto	261,663	1,931,458
	2001	5	de facto	345,665	2,039,274
Uganda	1991	10	de facto	52,622	1,548,460
	2002	10	de facto	77,470	2,497,449
United States	1850	1	de jure	5,103	197,736
	1860	1	de jure	6,996	273,947
	1870	1	de jure	11,679	383,308
	1880	1	de jure	17,368	502,840
	1900	1	de jure	34,504	845,908
	1910	1	de jure	62,043	1,503,468
	1920	1	de jure	49,240	1,050,634
	1930	1	de jure	65,527	1,216,024
	1940	1	de jure	90,050	1,351,732
	1950	1	de jure	105,363	1,922,198
	1960	1	de jure	160,984	1,799,888
	1970	1	de jure	202,214	2,029,666
	1980	1	de jure	254,610	2,267,320
	1990	1	de jure	328,494	2,500,052
	2000	1	de jure	370,249	2,818,644
2006	1	de jure	442,029	2,969,741	
Venezuela	1971	10	unknown	34,383	1,158,527
	1981	10	de jure	50,678	1,441,266
	1990	10	de jure	72,206	1,803,953
Total				13,684,634	212,928,938

* De jure constructed; original census de jure and de facto

Appendix B. Variables used in the analysis

MEN		% of elderly	% alone or	% with adult	% men in	% aged 65	%
Country	Year	alone	spouse only	child	agriculture	or older	marrying
Argentina	1970	13.0	38.1	35.9	15.3	3.2	86.5
Argentina	1980	12.4	41.8	33.9	12.5	3.5	88.3
Argentina	1991	13.6	50.9	31.0	4.1	3.7	90.4
Argentina	2001	14.6	51.6	33.7	7.2	4.0	81.3
Brazil	1960	6.2	20.6	49.0	52.4	1.4	93.8
Brazil	1970	7.5	24.5	41.4	42.0	1.5	92.9
Brazil	1980	8.1	29.4	44.5	29.0	1.9	92.6
Brazil	1991	7.6	31.6	45.5	22.8	2.2	93.1
Brazil	2000	9.4	35.5	45.4	16.2	2.6	91.8
Belarus	1999	14.3	74.2	19.7	4.3	4.4	95.4
Cambodia	1998	2.2	12.2	49.2	61.7	1.4	99.1
Canada	1871	2.7	2.7	NA	NA	2.0	92.2
Canada	1881	4.2	4.2	NA	44.6	2.2	91.0
Canada	1901	4.0	18.1	59.8	37.8	2.6	87.4
Chile	1970	7.1	18.4	43.4	22.5	2.3	88.6
Chile	1982	8.9	23.6	45.9	18.3	2.6	89.6
Chile	1992	10.2	27.7	46.2	16.4	2.8	89.4
Chile	2002	12.1	34.3	44.0	11.6	3.5	88.0
China	1982	12.3	28.8	44.9	64.5	2.2	96.0
Colombia	1973	5.5	12.9	47.8	33.0	1.5	88.0
Colombia	1985	6.4	15.9	56.2	NA	1.9	90.0
Colombia	1993	7.1	17.3	56.4	21.3	2.1	89.5
Costa Rica	1973	8.3	18.7	51.0	39.4	1.8	89.3
Costa Rica	1984	7.9	22.6	51.5	31.5	2.2	90.5
Costa Rica	2000	10.8	31.9	46.6	19.4	2.7	90.0
Ecuador	1974	9.1	19.9	48.2	45.7	1.8	90.1
Ecuador	1982	9.9	23.8	47.4	31.4	1.9	91.2
Ecuador	1990	9.8	25.4	48.5	29.8	2.1	90.8
Ecuador	2001	9.4	23.3	43.9	25.7	3.2	89.2
France	1962	12.8	58.2	21.4	17.0	4.4	89.4
France	1968	13.0	62.3	19.1	13.1	4.8	90.0
France	1975	14.6	67.7	15.8	9.0	5.2	89.5
France	1982	16.2	73.4	12.1	6.8	5.2	89.6
France	1990	19.3	80.1	11.7	4.7	5.5	90.3
Great Britain	1881	3.9	16.1	40.2	13.1	2.1	89.8
Greece	1971	6.0	38.0	36.4	27.7	5.0	94.7
Greece	1981	8.2	53.2	28.3	20.9	5.9	95.6
Greece	1991	9.0	58.0	28.1	15.1	6.3	95.2
Greece	2001	9.4	58.5	30.0	10.5	7.8	92.1
Hungary	1970	7.8	47.6	14.6	10.7	4.8	95.9
Hungary	1980	13.9	62.2	16.7	5.9	5.5	95.4
Hungary	1990	16.3	69.3	15.4	4.4	5.1	93.8
Hungary	2001	16.0	71.9	15.6	4.8	5.6	91.0
Israel	1972	12.7	65.3	22.6	14.5	3.5	96.4
Israel	1983	15.9	76.4	18.1	4.7	4.2	96.8
Israel	1995	16.4	72.6	18.9	2.3	4.3	96.5
Kenya	1989	8.6	19.0	46.1	35.1	1.6	92.9
Kenya	1999	8.8	19.5	43.8	NA	1.5	95.5

Appendix B. Variables used in the analysis (continued)

MEN		% of elderly	% alone or	% with adult	% men in	% aged 65	%
Country	Year	alone	spouse only	child	agriculture	or older	marrying
Mexico	1970	4.6	18.3	43.1	38.4	1.8	93.4
Mexico	1990	6.6	24.6	51.9	21.3	2.0	93.8
Mexico	2000	8.4	29.8	51.9	16.3	2.3	94.0
Norway	1865	5.7	12.6	33.7	45.3	3.0	90.4
Norway	1875	8.5	22.3	42.6	30.1	2.3	86.4
Norway	1900	4.6	22.4	39.6	36.3	3.6	89.3
Palestine	1997	2.4	18.2	63.7	8.1	1.5	98.6
Philippines	1990	3.7	18.4	55.3	35.3	1.6	95.9
Philippines	1995	4.4	19.0	56.6	36.7	1.6	95.4
Philippines	2000	5.3	20.9	55.6	32.7	1.7	94.5
Portugal	1981	10.6	58.1	24.1	15.2	4.7	94.1
Portugal	1991	9.7	60.0	24.9	12.2	5.7	95.3
Portugal	2001	10.7	63.7	24.6	5.7	6.9	94.0
Romania	1992	12.4	65.0	23.9	15.7	4.6	95.6
Romania	2002	12.6	63.1	28.6	18.1	5.9	91.2
Rwanda	1991	4.2	12.4	52.0	NA	1.5	90.9
Rwanda	2002	8.6	16.1	45.4	58.4	1.3	91.0
Vietnam	1989	4.7	19.2	61.1	57.2	1.9	98.6
Vietnam	1999	3.2	19.6	61.6	58.3	2.4	99.0
South Africa	1996	11.5	30.0	44.3	5.3	1.8	84.1
South Africa	2001	10.3	30.3	44.4	5.5	1.8	86.1
Spain	1991	7.8	51.4	35.9	12.0	5.6	90.8
Spain	2001	11.5	53.4	33.2	5.5	7.2	87.9
Uganda	1991	13.3	22.7	35.9	58.0	1.7	91.8
Uganda	2002	12.9	22.4	35.6	47.7	1.6	95.2
United States	1850	1.9	14.4	64.2	45.1	1.3	NA
United States	1860	2.5	15.1	62.2	42.5	1.3	NA
United States	1870	2.3	16.1	59.3	46.3	1.5	NA
United States	1880	2.7	19.0	54.8	41.4	1.7	91.9
United States	1900	5.0	21.7	51.6	33.9	2.1	89.4
United States	1910	4.8	23.1	50.4	30.1	2.2	88.2
United States	1920	5.4	25.6	48.2	25.9	2.4	87.9
United States	1930	7.2	31.1	42.5	21.8	2.7	88.8
United States	1940	8.3	33.6	39.6	17.6	3.4	88.9
United States	1950	9.8	43.8	30.8	12.1	3.9	91.7
United States	1960	11.7	57.8	21.2	7.4	4.0	92.6
United States	1970	14.5	67.4	15.4	4.6	4.2	93.4
United States	1980	14.1	73.0	13.4	3.6	4.5	94.0
United States	1990	15.1	74.0	13.9	3.4	5.0	93.6
United States	2000	16.6	73.6	14.0	2.9	5.1	90.3
United States	2006	17.4	73.6	13.6	2.9	5.2	86.4
Venezuela	1971	11.9	18.8	46.5	NA	1.3	82.9
Venezuela	1981	10.5	19.1	49.1	11.9	1.6	86.5
Venezuela	1990	9.8	19.2	50.9	12.9	1.8	86.9
Mean		9.3	36.5	38.6	23.2	3.2	91.5
Standard Deviation		4.2	21.4	14.7	16.8	1.6	3.6

Appendix B. Variables used in the analysis (continued)

WOMEN		% of elderly	% alone or	% with adult	% men in	% aged 65	%
Country	Year	alone	spouse only	child	agriculture	or older	marrying
Argentina	1970	13.5	26.9	31.0	15.3	3.8	87.6
Argentina	1980	16.4	31.4	30.2	12.5	4.7	89.9
Argentina	1991	23.9	42.9	28.1	4.1	5.2	91.3
Argentina	2001	26.3	46.3	30.8	7.2	5.9	83.0
Brazil	1960	8.8	16.1	38.9	52.4	1.4	91.4
Brazil	1970	9.6	18.5	35.4	42.0	1.7	91.1
Brazil	1980	13.2	24.8	37.9	29.0	2.2	90.5
Brazil	1991	14.3	27.9	38.8	22.8	2.6	90.7
Brazil	2000	16.3	31.0	42.4	16.2	3.3	87.8
Belarus	1999	41.7	66.6	21.6	4.3	9.0	96.4
Cambodia	1998	5.2	9.6	39.9	61.7	2.0	96.1
Canada	1871	4.0	4.0	NA	NA	1.7	91.7
Canada	1881	6.5	6.5	NA	44.6	2.0	89.6
Canada	1901	4.6	14.6	60.0	37.8	2.5	88.3
Chile	1970	7.2	13.4	36.6	22.5	2.8	86.8
Chile	1982	10.3	19.1	38.5	18.3	3.3	87.5
Chile	1992	11.8	22.0	42.3	16.4	3.8	86.6
Chile	2002	15.1	28.5	43.2	11.6	4.6	84.5
China	1982	13.5	24.2	35.4	64.5	2.7	99.8
Colombia	1973	5.9	9.8	39.9	33.0	1.7	83.9
Colombia	1985	6.4	11.6	49.0	NA	2.0	87.6
Colombia	1993	7.3	13.2	52.0	21.3	2.4	87.6
Costa Rica	1973	7.7	14.1	44.8	39.4	1.8	84.4
Costa Rica	1984	9.9	20.1	42.8	31.5	2.3	86.0
Costa Rica	2000	12.7	26.3	45.9	19.4	3.0	86.3
Ecuador	1974	9.8	17.1	39.7	45.7	2.0	87.8
Ecuador	1982	10.9	20.9	39.5	31.4	2.1	88.8
Ecuador	1990	11.6	22.8	41.4	29.8	2.3	88.7
Ecuador	2001	9.8	20.1	41.5	25.7	3.5	87.6
France	1962	32.9	53.6	18.3	17.0	7.4	90.9
France	1968	34.3	57.5	17.1	13.1	7.8	91.3
France	1975	37.1	63.5	13.8	9.0	8.2	91.7
France	1982	41.2	69.5	8.6	6.8	8.2	92.8
France	1990	48.1	79.4	8.3	4.7	8.5	92.8
Great Britain	1881	6.7	14.5	40.4	13.1	2.6	87.0
Greece	1971	13.5	29.3	26.6	27.7	6.3	93.1
Greece	1981	19.4	43.3	22.1	20.9	7.2	93.8
Greece	1991	24.5	51.4	22.9	15.1	7.9	95.3
Greece	2001	25.6	55.7	25.0	10.5	9.4	94.8
Hungary	1970	18.3	36.5	15.5	10.7	6.7	94.4
Hungary	1980	31.2	53.2	19.1	5.9	8.0	95.8
Hungary	1990	37.6	59.5	18.6	4.4	8.2	96.4
Hungary	2001	39.9	64.0	17.1	4.8	9.5	95.5
Israel	1972	32.9	62.4	14.6	14.5	3.6	97.6
Israel	1983	44.1	78.4	12.1	4.7	4.8	97.1
Israel	1995	42.7	73.9	14.6	2.3	5.6	94.9
Kenya	1989	18.0	22.8	35.3	35.1	1.7	95.4
Kenya	1999	17.4	22.1	34.3	NA	1.8	95.6

Appendix B. Variables used in the analysis (continued)

WOMEN		% of elderly	% alone or	% with adult	% men in	% aged 65	%
Country	Year	alone	spouse only	child	agriculture	or older	marrying
Mexico	1970	8.2	16.4	40.3	38.4	1.9	92.6
Mexico	1990	10.3	21.6	44.8	21.3	2.2	92.2
Mexico	2000	12.0	25.3	47.6	16.3	2.7	92.4
Norway	1865	10.1	15.2	28.3	45.3	3.8	86.3
Norway	1875	15.1	24.7	35.8	30.1	3.0	80.3
Norway	1900	8.4	21.8	32.8	36.3	4.2	82.0
Palestine	1997	12.5	20.2	41.8	8.1	1.9	92.1
Philippines	1990	6.6	16.1	46.7	35.3	1.8	93.9
Philippines	1995	6.9	16.2	49.3	36.7	1.9	93.9
Philippines	2000	8.0	18.3	49.3	32.7	2.1	93.5
Portugal	1981	23.3	49.8	22.3	15.2	6.8	91.6
Portugal	1991	25.1	54.1	23.2	12.2	8.0	93.0
Portugal	2001	26.6	58.4	23.3	5.7	9.5	93.3
Romania	1992	32.1	58.4	23.0	15.7	6.6	96.8
Romania	2002	31.6	58.3	27.2	18.1	8.3	94.8
Rwanda	1991	12.4	16.7	40.8	NA	1.6	96.5
Rwanda	2002	12.1	15.6	37.7	58.4	1.6	93.2
Vietnam	1989	13.1	20.9	49.4	57.2	2.9	97.0
Vietnam	1999	9.1	17.9	51.2	58.3	3.5	94.7
South Africa	1996	15.4	23.0	44.1	5.3	2.9	83.0
South Africa	2001	12.7	20.3	45.6	5.5	3.1	81.9
Spain	1991	22.6	48.1	32.1	12.0	7.9	92.6
Spain	2001	27.4	53.8	29.2	5.5	9.8	90.6
Uganda	1991	12.8	16.8	28.3	58.0	1.7	97.1
Uganda	2002	13.9	18.4	30.8	47.7	1.5	97.0
United States	1850	4.2	12.6	67.0	45.1	1.3	NA
United States	1860	4.3	12.6	66.2	42.5	1.3	NA
United States	1870	3.7	12.7	63.0	46.3	1.5	NA
United States	1880	6.2	16.7	58.1	41.4	1.7	93.0
United States	1900	7.2	17.8	58.0	33.9	2.0	92.1
United States	1910	6.6	17.9	57.8	30.1	2.2	91.3
United States	1920	6.4	19.2	55.8	25.9	2.3	90.6
United States	1930	9.1	24.1	51.1	21.8	2.7	91.1
United States	1940	12.3	27.9	45.7	17.6	3.5	91.5
United States	1950	15.7	35.7	37.8	12.1	4.3	92.5
United States	1960	22.8	48.3	28.1	7.4	4.9	92.9
United States	1970	32.0	59.5	20.3	4.6	5.8	94.5
United States	1980	37.1	67.0	15.8	3.6	6.7	95.4
United States	1990	38.0	69.4	15.2	3.4	7.5	94.5
United States	2000	36.2	68.0	17.7	2.9	7.3	92.0
United States	2006	34.8	67.0	18.7	2.9	7.2	89.4
Venezuela	1971	7.3	11.1	41.5	NA	1.6	76.0
Venezuela	1981	7.7	12.8	42.6	11.9	1.9	83.2
Venezuela	1990	7.9	13.5	45.2	12.9	2.2	86.1
Mean		17.5	32.4	35.4	23.2	4.1	91.1
Standard Deviation		11.7	20.4	13.8	16.8	2.6	4.5