

Extended households and economic dynamics in Orkney, Scotland, 1851-1901

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In most preindustrial agrarian economies, the household is the primary unit of production, consumption, and demographic decision-making. Chayanov [1] hypothesized a strong relationship between the intensity of household food production and the household's demographic life cycle, as summarized by changes in its consumer/producer (C/P) ratio (a measure similar but not identical to the demographer's standard dependency ratio). Anthropologists have been interested in this idea, but have largely been unable to test it critically because of a dearth of prospective data on multi-generation household dynamics. Recently, Hammel [2] has noted that the sharp, unfavorable changes in C/P ratios predicted by Chayanov for the nuclear family life cycle may be dampened by household extension over a scale of 1-3 generations, making complex stem or joint households economically preferable to smaller production units.¹ Again, this prediction requires prospective, multi-generation data to test; thus, Hammel's extension of Chayanov is unlikely to appeal to most cultural anthropologists, who typically have very short runs (< 10 yrs) of field observations on household demography and economy.

In principle, historical demographic studies could provide material for addressing the issues raised by Chayanov and Hammel. But, for historical demographers working with parish records from preindustrial western Europe (i.e. most historical demographers), three considerations, two substantive and one "psychological", are likely to limit their interest: (i) parish records generally do not allow individuals to be linked to specific households, (ii) ancillary information (on, e.g., the value of family land holdings) that would otherwise be useful

¹ At the same time, Hammel suggests that the "micropolitics of internal competition" limits household size by contributing to the fission of larger, more extended households. Both historical and ethnographic studies indicate that mean household sizes are seldom much above six members [3], and stable population models predict that mean household sizes should almost always be well under 10 members given the high mortality characteristic of preindustrial populations [4, 5].

in constructing control variables is usually lacking, and (iii) demographers working with historical records from western Europe “know” that extended-family households were so rare as to be effectively non-existent in that region, even in preindustrial times [3, 6]. We suggest that the latter “knowledge” may be untrue for at least certain parts of Western Europe, and the very records that historical demographers typically examine may sometimes hide that household extension.

The North Orkney Population History Project is combining approaches from historical demography, historical archaeology, economic history, and oral history to study the dynamics of farming households in the northern islands of Orkney, Scotland, in the nineteenth and twentieth centuries.² Over the period 1851-1901 we have decennial census returns, organized by named households, that tell us household composition, the occupation (if any) of each household member, and how each member is related to the household head. We also have prospective vital registers of births, death, and marriages, all of which can be linked to specific households. Economic information comes from annual tax valuations, which tell us about the size and taxable value of the landholdings of each household in the study area. Finally, we can identify and survey the physical remains of each household-based farmstead in the database for archaeological study. To date we have compiled information on a total of about 350 households and have completed record linkage for approximately 40 percent of them. Eventually we expect to have complete information on about 500-600 households.

By themselves, the historical demographic data sources (censuses and vital registers) would indicate that household extension is rare and confined to a few three-generation stem families. The surviving archaeological remains of the *same* households, however, show clearly that many units listed as separate nuclear-families are in fact extended from an economic point of view: joint households, usually linked by brothers, are contiguous or even physically joined and share a common set of structures (barns, byres, corn kilns, stables, pigsties) that are essential for

²This project is funded by NSF grant HSD 0527539. The specific islands under investigation are Westray, Papay, Faray, Eday, Sanday, and North Ronaldsay. The period being studied is determined by the beginning of regular censuses (which provide detailed information on household composition and occupation in decennial slices) in 1851 and the end of the period for which individual-level census returns are available (after 1901 the individual records are confidential). Vital registration information on births, deaths, and marriages, all of which can be linked to the named households in the censuses, are available for the entire period from the General Register Office, Scotland, in Edinburgh. These data have now been linked to provide prospective runs of data for up to 50 years for each household in the study.

each functional farming unit. By this criterion, the frequency of household extension in northern Orkney ranges (depending on island and period) from about 3 to 38 percent (Table 1), reaching levels similar to those observed in societies where household extension is expected and encouraged.

This poster presents preliminary analyses of the dynamics of stem-, joint-, and nuclear-family households for a small portion of the study area. The total number of households examined (10) is small, but each has a complete 50-year run of individual-level data from 1851 to 1901. Three main questions will be addressed: (i) does the moderating effect of household extension on Chayanovian C/P ratios work as postulated by Hammel, (ii) are unfavorable C/P ratios in nuclear-family households predictive of the subsequent formation of extended households once controls are entered for household size before and after extension, landholding size and quality, occupation (farming vs. non-farming), and the average relatedness of household members following extension, and (iii) what is the effect of C/P ratio on the risk of household dissolution once the same controls are entered? A combination of simple time-series analysis and event-history analysis will be used to explore these questions.

Literature Cited

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Table 1 Percentage of extended family households, 1851-1901

Island	1851	1861	1871	1881	1891	1901
Eday	3.2	5.9	7.3	6.6	6.3	5.3
North Ronaldsay	7.9	5.2	8.0	6.6	4.5	3.4
Papa Westray	4.8	8.5	5.1	6.3	2.9	3.0
Pharay	7.1	5.9	16.7	38.5	22.2	12.5
Sanday	5.5	4.6	5.5	4.0	3.6	2.8
Westray	4.6	4.4	4.7	6.6	4.0	3.9