

### **III. Communications**

EVALUATION OF FAMILY DATA RELATING TO A RELIGIOUS SECT  
IN IRELAND IN THE 17<sup>th</sup> AND 18<sup>th</sup> CENTURY:  
A PRELIMINARY REPORT ON METHODS AND RESULTS  
OF AN INVESTIGATION INTO THE DEMOGRAPHY OF THE QUAKERS.

D. E. C. EVERSLEY  
(Birmingham)

*I. Background*

Following the pioneering work of M. Louis HENRY and his colleagues in France, there has been a good deal of interest in England in the possibility of adapting the French methods to local conditions. So far, three principal lines have been pursued. The earliest attempt at complete reconstitution of the vital statistics of the past was Dr. T. HOLLINGSWORTH work on the British peerage. The first article appeared in Population Studies in 1958, and was concerned only with the British Dukes. This was followed by an investigation of the entire British nobility, published as a supplement to Population Studies in 1964. Like M. HENRY's study of the bourgeoisie of Geneva, HOLLINGSWORTH work suffered from the point of view of its usefulness to the economic and social historian as that is concerned a small sub-group of the population whose life experience was unlikely to be the same as that of the population at large.

In 1964, Dr. E. A. WRIGLEY of Cambridge began a study of the parish of Colyton in Devon from the 16<sup>th</sup> to the 19<sup>th</sup> century. Since then, under his superintendence a study of second parish, this time in North Devon (Hartland) has been begun. The method employed is, with slight modifications, that of M. HENRY's Manuel. Individual slips are made out for each act and then combined into Family Reconstitution Forms. At present, some 3 000 such forms have been completed. Dr. WRIGLEY has begun a manual sorting of the material, which has already yielded some astonishing results (to be published early next year in a British journal). Without anticipating this publication, it may safely be said that these results will cast doubt on many accepted generalizations about population move-

ments in the past, of the kind that were thought to be universally applicable rather than those which have purely local significance.

Dr. WRIGLEY's work has proved that reconstitution is possible in England, despite the fact that registers here are much less ample than in France, and despite the very much greater mobility of the population especially in the developing industrial districts of the Midlands and the North. At the same time, Colyton and Hartland were exceptionally well kept registers, both as to completeness and continuity. The Cambridge Group on the History of Population and Social Structure, which is led by Mr. Peter LASLETT and Dr. WRIGLEY, has now completed a collection of summaries of about 150 other important village parish registers in England which have been analyzed by local voluntary helpers, aggregatively rather than nominatively and it appears from this preliminary sample survey that it will not be difficult to find a good many more parishes in the country susceptible to the same sort of analysis as Colyton.

There are however practical problems. These may be grouped under the following four headings:

1. Time and skill required in affecting the reconstitution of families especially in larger communities. Each such parish may require the full-time attention of a skilled research worker for a year or more just in order to produce a useable number of reconstitution forms.
2. The present methods of analysis are slow and need to be speeded up to produce the main demographic outlines quickly.
3. Even when these demographic outlines are completed, we still do not have the social economic information for the community required to place the population picture into a meaningful context.
4. The geographical coverage of the parishes which have been chosen on account of their suitability for reconstitution may not be such as to facilitate the socio-economic interpretation especially of events during the main period of economic growth in the 18<sup>th</sup> and 19<sup>th</sup> centuries.

A number of lines of inquiry have therefore been begun with a view to solving these problems. The general background of existing work and the techniques followed are set out in a volume to be published in November 1965. This covers analysis from static materials (old family listings, early census enumerators'

schedules), reconstitution from parish registers, and aggregative analysis of registers, as well as discussing the interpretation of the demographic results.

However, since this volume was completed at the beginning of 1965, new lines of inquiry have been opened.

1. A start has been made by Mr. WRIGLEY in Cambridge and Mr. NIGEL Cox of the Computer Laboratory in the University of Newcastle-on-Tyne on a far reaching project to automate family reconstitution. Briefly, the aim is to draw up a program of identification and elimination, by which each single entry of vital statistics (births and deaths in particular) can be correctly allocated to a family (i. e. a unit constituted by a marriage). The details cannot be discussed here, and indeed are only in their early stages. The logic behind this work is that the computer can readily identify the surname of the person concerned (though there is some difficulty about variations in spelling), as well as the locality where the event took place. In the case of births, where the names of the parents are usually given, it is then usually a relatively simple matter to identify the correct set of parents. After these initial allocation, it is a simple matter to calculate, all the required information, to group it, index it, and finally produce the desired measures like age-specific fertility and life tables.

However, it must be stressed that this work is very much in its first stages, and that it is not yet by any means certain that the process when designed will materially speed up reconstitution.

2. We are on easier ground when dealing with the second stage, the evaluation of the reconstituted family. Here there is much more scope for computerised techniques. As will be described below, some progress has been made in the use of a combination of punched card and magnetic tape work on a IBM system, but it is clear that the way is open here for fully automatic analysis. This line is now being pursued by Dr. WRIGLEY, Mr. COX and D. EVERSLEY using the Irish material as a test case. Briefly, instead of coding each event on the family reconstitution forms, punching cards from the coding forms, and then mechanically sorting and tabulating from the cards it is possible to punch the raw data from the forms straight on to tape. (By raw data we mean the data of the parents marriage and their birth dates, as well as the births and deaths of all their children, as well as the eventual death of the parents. The information includes the sex of the children, twins, re-marriage of widowers, etc.) The computer can then be

programmed to perform a first stage of converting calendar dates into points on a time scale from which it calculates such matters as age at marriage, duration of marriage, intervals between births, infant and child mortality. The third stage will be indices such as age specific fertility rates, total family size by age of parents at marriage and duration, infant mortality indices and general life tables, an so on. Lastly, we can calculate statistical indices of reliability, all kinds of averages by area and period of time, and dispersions around the mean.

Such a programme will take a long time to write, and include a relatively large number of fairly simple arithmetical operations. The aim of the present work is to produce a standard programme of analysis so that family data from whatever source, once they are put on to the family reconstitution forms devised by the Cambridge Group, can be processed by unskilled labour punching the information on to tape and then feeding the data into a computer, possibly at a central research establishment, which will produce final output in standardised tables.

3. This still leaves us with the problem of interpretation of the data in an economically meaningful way, and geographical coverage. In order to test the feasibility of studying a group of people about whom something was known in relative detail both demographically and from a social and economic point of view, the present writer has begun an investigation which will be briefly summarised below.

## *II. Study of a dispersed sub-group*

The general logic behind the study of dispersed sub-groups is this: whilst it is possible, as has been shown, to make successful reconstitutions of individual villages, and possibly of small groups of villages, the success of the operation depends in part on the hope that the population was relatively immobile, or alternatively the belief that those who remained in the community to be available for the reconstitution process were similar in their demographic characteristics to those which moved and escaped notice.

At the same time, it is difficult to establish with certainty that the communities chosen for this work are in any way representative of the region in which they are located, let alone a whole country. Only if they could be chosen on a

random basis would there be any guarantee, according to the size of the sample, that conclusions based on local studies could be applied more widely. Unfortunately, as far as England is concerned, the parishes which have so far been surveyed and show a promising completeness of information are also curiously unevenly distributed.

Whilst we are therefore awaiting further reconstitutions of entire communities, it is necessary to pursue the possibility offered by dispersed sub-groups. This has already been done by L. HENRY, PELLER and HOLLINGSWORTH.

In the British Isles, a possibility is offered by the Society of Friends (Quakers). This is a protestant religious sect, founded in the middle of the 17<sup>th</sup> century by George Fox, and spreading fairly rapidly especially in northern and midland England and in Ireland.

The Quakers were given, from earliest times, special status vis-a-vis the law of the Land, and able to pursue their customs in ways distinctively different from other sects. The most important fact was that they did not baptise their children, but registered their births, buried their dead always in their own burial grounds, and were allowed to conduct their own marriage ceremonies. The condition of this was (and still is) that they should keep detailed records, especially of their marriages. Moreover, membership of the Society was privilege, and the most usual way of acquiring it was by birth, so that it was all the more important that accurate records should be kept. Moreover, the intricate structure of the Society in Preparative, Monthly, Quarterly, and Yearly Meetings involved a procedure of reporting vital statistics which makes elaborate cross checking possible.

The Quakers lived in clusters, for the most part, that is, they liked to settle near one of their Meeting Houses and thus we find them in most large towns, and in certain country districts (e.g., in north Lancashire and the Yorkshire dales). Today, they are mostly middle class, and in easy circumstances, with a high proportion of intellectuals amongst them. But in the early days, and certainly down to the beginning of the nineteenth century, they found their converts amongst ordinary people. There is no complete social analysis by occupations, but most authorities are agreed that whilst mere labourers are probably under-represented in the Society, the great majority of members were artisans, small farmers, shopkeepers and other trades, with a sprinkling of professional men like doctors and teachers. Whilst one would not call them "representative" of the population as a whole, they are certainly much more like ordinary people than aristocrats.

They are, as our research is beginning to show, unlike other sections of the population in their demographic characteristics. They lived, on the whole, simply but sensibly. Strong drink was not allowed, and few of them smoked. They avoided every form of excess. They included a large proportion of people with some knowledge of science and medicine, compared with the rest of the population. Their internal organisation took good care of the poor, the sick, the orphans. They were amongst the earliest sections of the population to adopt protective inoculation against smallpox, and later vaccination. Hence, it will not be surprising, that, in this case like the aristocracy, their expectation of life is greater, their infant mortality lower. Large families are usual. Deaths in children are rare.

Their records are fairly easy to exploit. In 1840, when the new British legislation had introduced civil registration, the non-conformist sects which had kept their own registers were compelled to deliver these up to the custody of the General Register Office. They did so and today all these records are in the Public Record Office in Chancery Lane, London. The Quakers, however, decided, for the reason stated, that they must have exact copies of the originals. Accordingly, a number of clerks were employed over several years to transcribe all entries, by Quarterly Meetings (i. e. , areas usually covering two or three counties) into large ledgers, roughly alphabetically and chronologically. Preliminary work was begun on some of these registers in 1963 to ascertain the feasibility of reconstitution. This certainly proved fairly easy, since family names were close together, and the amount of information given was normally sufficient to make up families without much hesitation. During this period however, the present author visited a number of local repositories to look at their copies and other subsidiary material to see whether any additional information might still be available. In the course of this search, I visited Dublin, the headquarters of the Society of Friends in Ireland. There I found that, as in so many cases, British legislation had not in fact ever been enforced in Ireland, and though the transcripts were made the originals are still found in Dublin. Whilst searching through these, my attention was drawn by the curator of the historical collection to the existence of "family lists". These are volumes, arranged by Monthly Meetings (that is, a group of local meetings usually at county level), where each page (or each section of the page) begins with a marriage (of which all details are recorded), and continues with the births of all the children, and the deaths of children and parents in chronological sequence, often also the marriage of these children and the migration of members of the family.



These lists were mostly compiled contemporaneously, but frequently supplemented later, checked and even corrected by genealogists and the descendants of the original marriage. In all, some thirty such volumes were found at Dublin. Subsequent inquiries have revealed at least two further deposits, one at Waterford in the south of the country and another at Lurgan near Belfast. No complete count has yet been made, but it is estimated that a total of perhaps 40 000 such lists for Ireland are available for the period 1650-1850, with some later examples.

Most of these have now been microfilmed and are in Birmingham, being analysed in a way still to be described.

On his return to England, the author inquired at the central offices of the Society of Friends whether there were not also English family lists, which would greatly facilitate the work. (The Irish Quakers were, without exception, emigrants from England, and in all other ways closely followed English practice.) He was informed that there were no such lists, and if there were, they would have been found a long time ago by the numerous historians of Quakerism. However, after some negotiations with the Public Record Office, we were finally allowed to conduct a direct search in the store rooms of the P. R. O. and after a very short while, the English family lists were found, being inaccurately described in the catalogues of holdings of Quaker records as further copies of births, deaths and marriages. No attempt has yet been made to produce an inventory of these English lists which are contained in parts of several hundred volumes, and there is little doubt that for future research there are tens of thousands of family lists.

However, since the Irish lists were particularly clear, and had been microfilmed, and since they constituted a manageable universe, it was decided to begin with these. The first task was to copy the primary information into family reconstitution forms, modified from those by the Cambridge Group and of course also based on the original ones used by the I. N. E. D. A system was used whereby it became possible to cross index information from one register book to another: since the basic unit of analysis was the marriage, this meant that a card index of husband's and wives' names was kept, and by this means it was often possible to supplement information given in a single register, e. g. , by adding the age of the bride marriage, or indicating a later marriage of the child of a marriage on the form thus determining that it had at least survived childhood. The next step was to select a single Monthly Meeting area (Mountmellick) for a trial



exploitation. From about 400 forms originally completed, 343 were finally accepted for further analysis. The ones rejected failed certain elementary tests, e.g. there were obviously glaring mistakes in the dates, or were deficient in practically all useful information, or the record terminated abruptly after only one child because the family moved (this was often stated).

This is not to say that the 343 contained all the required information. This was not so. However, we used all those forms which could contribute something to the knowledge of each cohort, e.g., ages at marriage, or birth intervals, or survival of children born.

On the completed and accepted forms, certain subsidiary operations were then performed manually, some of them connected with the peculiarities of the English calendar before 1752. We then calculated ages at marriage, birth intervals, age of mother at birth, and so on, in accordance with the spaces provided on the form. Next, a coding form was devised, in three parts: one relating to details of the marriage itself, one to marital fertility, one to the birth and survival of the children. Coding was then undertaken of all available information, adding a column for the reliability of the data in case of all items depending on dates. Information from the coding sheets was then punched on to 80 column IBM cards - normally one card for each marriage and one additional card for every two children. Cards were then analysed on the series of machines in the computing centre of the School of Public Health in Berkeley, California.

During this pilot test, several shortcomings of the system were discovered. For instance, because maternal ages at marriage and births were given in single years, the grouping into five-year spans proved extremely time-consuming. To match ages of husbands in five-year groups against ages of wives in five-year groups, sorted into ten-year cohorts and listed according to our five ranks of reliability, was an operation which meant passing the cards through the sorters so many times that many of them threatened to disintegrate. Moreover, certain complex calculations, such as age-specific fertility were altogether too much for exploitation by card sorter, and a programme for a computer was therefore written. At this stage, contact was taken up again with the Cambridge group who were by this time thinking in terms of performing the entire operation by computer. Meanwhile, the remainder of the sorting operations on the original pilot group was carried out, and the results may be briefly summarised here and will be communicated more fully later.

### III.

Some very rough results:

Birth intervals hardly vary over the whole period (mainly 1650-1800 in the sample), and range from 22 to 27 months. Birth intervals in cases where the previous child was dead at the time of the next birth were about 19 months, and were the previous child was dead before conception of the next one, 14 months. (Note: these figures subject to correction at a later stage).

Age at marriage remained stable over the whole period, though there were slight variations as between chorts. The median age for men at marriage remained throughout in the 25-29 group, but there were three periods (1680/89, 1710/29, and 1750/59 when it tended to be towards the bottom of this range, and one, between 1730 and 1749, when it was nearly 30. For women, the median remained always between 20 and 24, though in 1730-39 it was just over 25.

It is hard to see any strong connection between these movements and fertility except that the one cohort (1730/39) when both husband's and wives' age of marriage rises, also sees a pronounced fall in marital fertility (see below). On the other hand, the following period (1740-49) when age at marriage of men was still high, fertility recovered quite noticeably. The difference is that during that period the age at marriage of women was back to its normal level.

In another tabulation, we related total number of children in each marriage to exact age of mother and father at marriage, respectively. Precise measurement is still being worked out, but the general trend may be shown as follows:

37	cases	where	at	marriage	mother	was	15 - 19	:	12	cases	of	9 +	children
68	"	"	"	"	"	"	20 - 24	:	14	"	"	9 +	"
42	"	"	"	"	"	"	25 - 29	:	8	"	"	9 +	"
25	"	"	"	"	"	"	over 30	:	none				

This indicates that the chance of a large family is strongly bound up with younger ages at marriage for women.

For the men the picture is as follows:

61	"	"	"	"	3 cases of men marrying	15 - 19 : no large families
83	"	"	"	"	20 - 24 : 15 cases of 9 + children	
36	"	"	"	"	25 - 29 : 22 " " 9 + "	
38	"	"	"	"	30 - 34 : 9 " " 9 + "	
					over 35 : 3 " " 9 + "	

This appears to show that up to age 35, the chances of still producing a larger family are exactly the same, after that date they tail off sharply.

We are also producing more exact measures here, and separating first and subsequent marriages.

More boys were born than girls: the sex ratio at birth was about 108. We shall have completed infant mortality calculations by the time this paper is presented.

Total fertility: ignoring the earliest and last cohorts, where numbers are very small, in the 10 middle cohorts where we have from at least 13 to a maximum of 50 family histories, completed family size varies from 3.8 (1750-59) to 6.5 (1720-29).

The first of these figures is open to some doubt since there are only 18 cases to be taken into account, but we also find 4.6 in 1710-19, based on 41 cases. The long term average is 5.2, and the median falls in the middle of the '5' group.

There is little pronounced seasonality about the marriage pattern as a whole, with a slight emphasis on spring weddings. But throughout there are fewest marriages in autumn, and towards the end of the period March to May weddings become fashionable. We have not yet ascertained the seasonality of first or subsequent births.

Of all marriages, 87 % were first marriages of bridegroom, but over 96% of brides' marriages were of spinsters. The proportion of re-marriage of bridegrooms falls noticeably towards the end of the period.

These results must be taken as very tentative, and no attempt will be made to explain them from an economic or social point of view. The object of this small pilot study was to test the feasibility of the method, the degree of confidence one may have in the incomplete data, and to perfect techniques of evaluation. One preliminary result is that for most sets of data it makes no difference whether we use only that information where we are reasonably certain of reliability and completeness, or include those where some guesswork, e.g. as to date of marriage (based on date of first birth) has been employed. But in a few cases there are substantial differences between the results, mainly where we have relatively few certain data to use at all.

Meanwhile, a further 1 500 families have been put on to reconstitution forms, and by the end of the year, we hope the figure will be 4 000, (i. e. roughly a 10 % sample. This will be achieved by using a few Meeting areas exhaustively rather than selecting samples from each, because reconstitution becomes easier and more complete if one takes all families from one county rather than one in the families from all counties). These will cover all parts of Ireland and the period 1650-1820. They will then be processed in accordance with the mechanical procedures now being tested, and it is hoped to present more realiable results next year. This is to be followed, if time and funds permit, by a socio-economic evaluation, and by a parallel study of the English Quakers based on the material discovered in the Public Record Office.