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Milovan Gavazzi, "Compound Families in Southeastern Europe"

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EDITORIAL

The Public Record Office: the feasibility study, what happens now?
On April 30th an announcement in the House of Commons by the Solicitor
General, Sir Ian Percival, brought to an end the long period of speculation
about the outcome of the Lord Chancellor's feasibility study into the pos-
sibility of concentrating the Public Record Office on a single site at Kew.
'The Government have made no secret of the fact that they make it a high
priority to get the records together as soon as possible ... the study dem-
onstrates that it is physically feasible to concentrate the Public Record
Office ... at Kew (and that) in the long run it would be cheaper as well as
so obviously better to have the records on one site. However it can be
done only after substantial building work at a cost of about £12 million.
Expenditure of that order cannot be justified in the present economic
climate, and the proposal for total concentration at Kew is therefore now
in abeyance.'

Sir Ian went on to say that the Public Record Office staff level, at present
406, (four years ago it was 480) would be maintained and that separate
consideration would be given to the maintenance work needed at Chan-
cery Lane. Examination of the proposal to transfer the Hundred Year old
registration records from the General Register Office would also continue.
In addition to this government statement the feasibility study itself has
become available. In view of our misgivings about it and the intentions of
some of the Civil Servants who were conducting it, it is a pleasure to be
able to commend the thoroughness with which the enquiry was ultimately
conducted. The 48 page report appears to represent the views of all
parties sympathetically and even-handedly. Space does not allow us to
describe the report's findings in detail and we will confine our comments
to the implications of the Government's decision not to implement the
move to Kew. Our principal concern is that we are left without a strategy;
the present storage facilities will be filled in about ten years time and the
longer a decision is deferred the greater the cost, both financially and in
terms of inconvenience to users and uncertainty to the staff. Nor are we
convinced by the arguments presented in the report of the sense of mov-
ing to Kew. Indeed paragraph 39 which announces that part of the new
British Library site in Euston Road will not be required for that develop-
ment (but that the Secretary of State has ordered the surplus land to be
sold!) surely warrents immediate investigation. The prospect of a single
central site containing the British Library and the Public Record Office as
an alternative to Kew would satisfy everyone, staff, users, the residents of
Kew and the Property Services Agency which would have two excellent
state owned buildings in which to re-house other hard pressed govern-
ment departments. We expect to have more information shortly on the
possibility of developing the Euston Road site.

Concealed within the study there lies the germ of an idea which, allowed
to grow, must have serious consequences. The need for a central micro-
film reading room is considered and the report recognises the benefit this
would bring to a substantial category of Public Record Office users. It is
however suggested that this facility be paid for by charging a fee and
recommends a scale of charges, £5 per day, £10 per week and £25 per
year. The implications of charging for the services of the Public Record
Office are self-evident and extend beyond the interests of Public Record Office readers. It would surely herald the introduction of fees in Record Offices throughout the country.

In the immediate future the highest priority must be given to the repair of the Chancery Lane building. The feasibility study states that £7 million must be spent on essential maintenance of this Grade II* listed building. This is a responsibility the Government must grasp without delay.

**Fees for Searching Parish Registers**

From 1st January 1982 the scale of fees to be paid by users searching parish registers held in parochial custody (or in those non local-authority diocesan record offices which charge fees), increased dramatically. The new Fees Order replaces the 'years searched' basis for fee payment with a scale based on time spent consulting the registers. The details are set out below:

<table>
<thead>
<tr>
<th>Description</th>
<th>Fee payable to incumbent</th>
<th>Fee payable to parochial church council</th>
<th>TOTAL FEES PAYABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searching register of marriages for period before 1837</td>
<td>1.80</td>
<td>1.20</td>
<td>3.00</td>
</tr>
<tr>
<td>(for up to 1 hour)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(for each subsequent hour or part of an hour)</td>
<td>1.20</td>
<td>0.80</td>
<td>2.00</td>
</tr>
<tr>
<td>Searching registers of baptisms or burials (including the provision of one copy of any entry therein)</td>
<td>1.80</td>
<td>1.20</td>
<td>3.00</td>
</tr>
<tr>
<td>(for up to 1 hour)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(for each subsequent hour or part of an hour)</td>
<td>1.20</td>
<td>0.80</td>
<td>2.00</td>
</tr>
<tr>
<td>Each additional copy of an entry in a register of baptisms or burials</td>
<td>2.40</td>
<td>1.60</td>
<td>4.00</td>
</tr>
</tbody>
</table>

The new Fees Order, *Parochial Fees (No. 2) Order 1981*, was approved by the General Synod on 6th July 1981 and four days later laid before Parliament. It appears to have been accepted at each stage without controversy but if the church authorities believe that silence on the part of users indicates acquiescence or approval they are surely mistaken. It would appear that none of the more prominent user organisations was aware of this new legislation until it had become law. In the case of the Records Users Group members had been misled by what they had taken to be an understanding that there would be no alteration in fees without further consultation with some of their members. This assurance was received from the church authorities by the deputation of records users (of which two were members of the LPS Editorial Board) which discussed the fees issue with the chairman and some of the members (together with their attendant administrators) of the commission appointed by Synod to consider parochial fees. This meeting followed the commission's publication of its findings in *Parochial Fees, GS385*.

If the timing of the new fees order was a surprise a change to an hourly rate had been expected. Charges on a time basis have been favoured by the church authorities since the early 1970's and the principal was in fact approved by the General Synod in 1976. Two years later in upholding this decision the Parochial Fees Commission commented 'this will assist academic researchers substantially'. The Commission recognised the old system was expensive for the researcher who needed to see a large
volume of material. It was also difficult to administer and while rejecting
the obvious alternative and proposing the abolition of search fees the
Commission attempted to meet users’ needs. It is to be regretted that
neither the Commission’s sympathy for records users nor its grasp of the
basic legal facts have been inherited by the servants of the church com-
missoners who have drafted the new legislation. The table of fees con-
tained in the Fees Order has been sent to every incumbent. It is ac-
companied by explanatory notes (Parochial Fees explanatory notes 1982)
which are wrong in their interpretation of the law and at variance with
other recent church literature on the same subject. The notes inform the
reader with apparent authority, there is a distinction between what is des-
cribed as a ‘particular search’ and searches of a general nature. A par-
ticular search is defined as ‘a search made with a view to finding a
specific entry about which the searcher already has some knowledge:
such a search should, broadly speaking not be expected to cover a period
of more than three years’. Of the so-called general search the notes would
have the reader believe there is no right of general search! Paragraph
18(6) states ‘custodians of parish registers are not necessarily obliged to
make parochial registers available for general searches’. Thus, the
argument continues, if there is no statutory obligation to allow such
searches there cannot be a statutory fee prescribed for this service. In
such cases, if general searches are permitted, incumbents are advised to
negotiate fees though it is recommended that such fees should be on the
basis of the rate for the statutory fees.

The origin of this novel misinterpretation of the law is a mystery. It was
unknown in earlier fees orders and the Parochial Fees Commission (see
GS385 Legal Notes Appendix III) made no reference to any distinction
between particular or general searches. The same is true of the Guide to
the Parochial Registers and Records Measure 1978 which was issued by
the church authorities in April 1978 as a handbook to explain the current
legislation (see Appendix A page 26). Nor does the measure itself make
any distinction between types of search. The only hint as to the parent-
hood of this extraordinary notion is contained in a letter from Lionel
Wadeson, Assistant Secretary General of the General Synod to the
Records Users’ Group. He draws attention to the Registrar General’s
circular no. 5A/1968 in which the Registrar General remarks ‘it seems
arguable that the statutory provision is intended to cover only searches
with a particular object in view (i.e. to trace one or more specific entries
of which the searcher already has some knowledge) and does not extend
to general requests to browse through the registers in case they contain
something of interest. Is it possible that the author of the explanatory
notes relied upon this circular as a reliable statement of the legal
position? Alas it seems that he did. Notwithstanding the warning contained
in the first paragraph of the circular, (the following comments) ‘should not
be regarded as a definitive statement of the legal position’.

In their present form the explanatory notes are grossly misleading. It is
inevitable that some incumbents will be confused about the real nature of
their obligations and those amongst the small minority who persistently
seek reasons for with-holding access to their registers have been pro-
vided with a new excuse for their delinquency.
The notes also contain a paragraph which repeats the advice contained in the Guide exhorting incumbents to fight the temptation to waive fees; 'any departure from the practice as a general rule of collecting these statutory authorised fees (is) undesirable'. Any shortfall in fee income will have to be met from extra funds provided by the parochial quota and so place an extra burden on the laity. This sombre warning of the consequences of such weakness is reinforced by the reminder that diocesan guidelines may also exist and in some cases a diocesan Books and Documents Committee to which reference should be made. In any case incumbents must not waive the fees without the agreement of their parochial church council. It is easy to see how an incumbent might take the view that the procedure for granting concessions is so hedged about with difficulty he will suppress his inclination to help the record user.

To be fair to the author of the notes, attention is drawn to the provisions of section 16 of the Parochial Registers and Records Measure 1978 which allow the temporary deposit of registers in a suitable place for exhibition research or copying. But it would appear in all matters of concessionary rates only 'bona fide students or persons carrying out academic research for a motive other than personal gain' can be considered. This implied restriction is not contained in the section of the Guide (see Appendix D page 33) but it was included amongst the recommendations of the parochial fees commission (see Parochial Fees page 75 section (35) (b)). This envisaged diocesan authorities laying down guidelines for their clergy to follow. We know from discussion with members of the commission they had hoped some form of passport might be issued by academic institutions and other reputable authorities which would enable an incumbent to separate the acceptable academic or serious amateur from the rest. This proposal foundered when attention turned to the criteria to be used in selection or rejection and to the problem of finding appropriate people to validate each individual's application. What for example constituted research for profit? How do you define academic research? Now it would appear the concept of allowing certain people special terms has been retained but with the onus of selection placed on local or diocesan shoulders and without any clear guidance as to which faces will fit.

We hope we shall be able to announce in our next issue the withdrawal of the 1982 Parochial Fees Explanatory Notes. Until this document is replaced incumbents and records users will continue to be misled about their respective rights and obligations and needless conflict and animosity will be generated. For our part we shall be working in partnership with the Records Users' Group, if necessary we shall seek a meeting with Church Commissioners and with the appropriate parliamentary authorities to secure the only acceptable outcome.

Two retirements: Olive Peach and Leslie Bradley

In the recent past LPS has lost the services of two loyal servants, Olive Peach and Leslie Bradley. Miss Peach has worked for LPS since 1975 and has taken charge of the production, promotion and sales of the LPS supplements and the success of the series of guides to registers deposited in record offices owes much to her hard work. Her last project for LPS, The Fourth Supplement to Original Parish Registers in Record Offices and Libraries promises to be as well received as its predecessors have been.
We regret that Miss Peach will not be undertaking our next parish register publication (to appear in 1984) which will consolidate in a single volume the contents of Original Parish Registers in Record Offices and Libraries and the four supplements, at the same time bringing up to date the information they contain. We wish Miss Peach a long and happy retirement.

When LPS was first conceived it was decided that it should be run as far as possible by a corporate body, the Editorial Board. The contribution of individual members of the Board is seldom revealed. Thus, it was not until David Avery retired that his authorship of those rousing editorials which enlivened the early issues of LPS was acknowledged. Leslie Bradley’s contribution to LPS has remained a secret for too long. He was amongst the first to recognise the potential value of LPS and to work for its success. In the early days, to save money, each issue was collated on a certain kitchen table in Derbyshire. Leslie walked as far as anyone around that table and readily undertook tiresome jobs such as book-keeping, preparing accounts, recruiting advertisers and promoting sales of the journal. As one of our proof-readers, a task he has kindly agreed to continue, he has always been the one who remembers to add up the figures; invariably he finds them to be wrong! As Treasurer his professional experience as a mathematician and headmaster enabled him to whip a spendthrift editorial board away from some of its more bizarre fantasies and towards a business-like management of LPS affairs. The sound financial footing on which the journal now stands is his achievement. It was under his guidance in 1977 the journal became a registered charity.

Leslie Bradley’s other contributions to LPS have been as an author. His mathematical training and research interests in local history have enabled him to stand astride the chasm which so easily divides the professional historical demographer from the amateur student of local population studies and to interpret one to the other generally to the benefit of both. He undertook this role first in 1971 when he wrote A Glossary for Local Population Studies. This was revised in 1978 and remains a valuable aid. The same skills are apparent in his most recent piece which appeared in our last issue in which he described the contents of Wrigley and Schofield’s The Population History of England. His study of the seasonality of baptisms, marriages and burials in certain Derbyshire and Nottinghamshire parishes which first appeared in LPS has been included in Michael Drake’s selection of readings from LPS; Population Studies from Parish Registers. This volume which will be available shortly has been adopted as an Open University set book. Leslie Bradley’s work is thus assured of access to a new and wider audience.

On behalf of all who have enjoyed LPS and benefited from it over the fifteen years of its existence we record our gratitude to Leslie for all that he has done; and may his proof-reading continue for many years to come.

Christopher Charlton
Michael Drake
Terence Gwynne
May Pickles
Roger Schofield
Richard Wall

December 1982
NEWS FROM THE CAMBRIDGE GROUP

THE POPULATION HISTORY OF ENGLAND: ERRATA

In preparing this book for the press we tried hard to ensure that the text should be free of errors. However, as was perhaps to be expected in so long and complex a work, a certain number of mistakes and misprints have crept in. We shall be using this space in LPS to publicise errata as soon as we become aware of them, and we welcome further contributions from readers. Here is a first list.

<table>
<thead>
<tr>
<th>Page</th>
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<td>113</td>
<td>18</td>
<td>Add an oblique stroke, so that the ratio reads: $\frac{L}{10;20} / \frac{L}{10;40}$.</td>
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<tr>
<td>124</td>
<td>35</td>
<td>For Beforshire read Bedfordshire.</td>
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<td>259</td>
<td>101</td>
<td>The figure for Beccles in the period 1781-1809 should be 12.7.</td>
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<td>322</td>
<td>3</td>
<td>Interchange column headings ‘Real wage’ and ‘Death rate’.</td>
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<td>529</td>
<td>18</td>
<td>GRR value for 1776 is 2.381.</td>
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<td>19</td>
<td>GRR value for 1781 is 2.488.</td>
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<td>685-91</td>
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<td>The ‘decadal’ parish rates quoted are in fact rates per century. The argument in the text relating variations in the incidence of crises to parish characteristics is unaffected by this change of scale.</td>
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<td>778</td>
<td>—</td>
<td>Index entry for Whiteman, E. A. O. delete refs to pp. 177, 284-5, 292-4.</td>
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A NEW APPROACH TO THE STUDY OF MARRIAGE HORIZONS

Jeremy Millard

Jeremy Millard is Staff Tutor in the Social Sciences in the East Midlands Region of The Open University

Introduction

There have been relatively few attempts by historical demographers to analyse marriage horizons beyond a simple examination of marriage numbers and percentages. This article aims, by way of a case study of parishes in north Buckinghamshire, to introduce readers of LPS to several more powerful techniques which are well within the grasp of the amateur local historian and which are, indeed, introduced in Leslie Bradley's A Glossary for Local Population Studies. It must be stressed from the outset, however, that the techniques introduced here are not intended to replace the more traditional historian's descriptive and analytical skills, nor supersede the more straightforward use of percentages. On the contrary, these additional techniques must be seen as complementing the more familiar methods. It is generally true that any technique, if properly used, can throw its own unique light on a subject, but, at the same time, its use inevitably involves a series of assumptions, short cuts or over-generalisations. This is why, in one sense, the more techniques used in analysing a particular topic the better, although in practice techniques will be selected, with both their strengths and weaknesses in mind, to do a particular job or fulfill a specific need. This article is therefore a demonstration of how certain techniques can be used when looking at the topic of marriage horizons. It will also be suggested that they are especially powerful in bringing out the underlying trend in a series of data, in other words, in looking for valid generalisations, as well as seeking to explain particular local situations. The value of these generalisations is that it allows us to make comparisons between different places and times.

The marriage distance

Parochial marriage registers constitute a vast and, as yet, largely untapped source of data for the analysis of marriage distances, both spatially and temporally. A marriage distance is defined as the distance between the parish of residence of the groom and the parish of residence of the bride, on the eve of their marriage, as recorded in the register. The site of the parish church is normally used in measuring these distances.
In looking at the marriage distances for a particular parish during a specific time period, it is possible to devise a measure of parish isolation by calculating the percentage of extra-parochial marriages (i.e. marriages in which one partner resided outside the parish). The higher this percentage is the less isolated the parish can be said to be. It is also demonstrable that, in general, parishes with large populations tend, for many reasons, including their better developed transport system, to have more, and more extensive, connections with the outside world; i.e. these parishes would, in these terms, exhibit a low degree of isolation. From a study, completed in 1976, it is apparent that there is a tendency for parishes with large populations to have low percentages of extra-parochial marriages. In other words, parishes with large populations, which we assume are less isolated than those with small populations, in fact come out as more isolated when this is measured by the percentage of extra-parochial marriages. This apparent paradox is a useful illustration of the fact that the use of quantitative techniques requires an awareness of the assumptions being made and the implications involved, and a very careful definition of what precisely is being measured. In fact the contradiction can perhaps be explained by the notion that in parishes with a large population any individual seeking a marriage partner within the parish has a greater chance of finding one simply because the population is large. It also tends to be the case that these parishes contain more urbanised populations, and it can be suggested that there is a greater likelihood of intermarriage within this population than with the more ‘rural’ parishes round about, because any individual tends to seek a mate from amongst the same or similar class or occupational grouping.

It is apparent, therefore, that, when trying to interpret something like the percentage of extra-parochial marriages, it is not possible to do so in any simple cause-and-effect manner, that many other factors also have a greater or lesser impact to make, and that it is constantly necessary to relate any attempt at explanation to the total societal context from which it comes. This lesson is particularly important when using graphical or quantitative techniques to examine an aspect of society, and this is certainly true of the techniques presented in this paper. However, I hope I can demonstrate the analytical value of certain techniques in advancing our understanding of the past, when these problems are borne in mind. Graphical and quantitative techniques are only aids, or tools, to help increase our understanding; they are certainly not panaceas allowing us to circumvent historical problems. In fact their use often throws up a whole new set of problems which must be faced by the historian. If they are faced successfully, however, they can add greatly to our knowledge.

**Hypotheses**

A study of extra-parochial marriages can also be used to examine spatial interaction. In other words, the distance, direction, and intensity of the inter-connections between different places over time. In this context, the marriage distance is a surrogate measure for spatial interaction. By a surrogate measure is meant something which will stand in, or approx-
imate, for something else for which there is no direct information. For example, historical demographers often use baptisms as a measure of births, and burials as a measure of deaths. They are not quite the same thing and there are, therefore, problems associated with their use. Nevertheless these surrogates are often the only measures available. In fact extra-parochial marriages are more than mere surrogates, because they are themselves one type of spatial interaction, and, in this sense, they are used as indicators of the general pattern of interaction over time.3

Given fairly complete and accessible marriage registers, which also record each individual’s parish, a study of marriage distances can commence at an early date. These conditions, however, do not normally prevail before 1754. It was in this year that Lord Hardwicke’s 1753 ‘Act for the prevention of clandestine marriages’, making it virtually impossible to contract a valid marriage unless it were carried out in a church according to an Anglican ceremony, came into force. The act also provided printed registration forms for the first time and these made provision for an individual’s ‘parish’ to be recorded. From 1754, therefore, despite problems of under- and mis-registration, we can be reasonably certain that there is a representative picture of the marriage patterns of a particular parish. It was not until 1837 (when civil registration of births, marriages and deaths commenced) that male occupational information was explicitly asked for on the registration form, although it was many years before it was also elicited from the bride. Before this date detailed class and occupational analyses can be carried out on a few registers for limited periods, and it is only possible to examine the gross marriage patterns.

The compilation of marriage distance data must be based on sufficiently large samples, in order to ensure that the resulting interaction patterns are likely to reflect reality. For any one parish, this means aggregating data into time-period groupings. The periods I used in north Buckinghamshire were of forty years’ duration, and, over the 160-year period from 1754 to 1913, this allowed four sequential patterns to be compared. As outlined above, it was felt that the accuracy and completeness of data is sufficiently reliable after 1754, whereas the socio-economic context (particularly because of transport possibilities) was significantly changed after 1913, for this data to act as a natural terminus. The four 40-year groupings were allocated because the commencement of the second, in 1794, is close to the appearance of the first relatively reliable population data (1801 Census); shortly after the commencement of the third in 1834 the era of railway construction began; and the last period (1874-1913) coincides nicely with the rapid breakdown of rural isolation first identified by Perry in his study of rural Dorest,4 thus facilitating a comparison with his study. Naturally there are many other possible period groupings. The point needs to be made, however, that they should be chosen both to ensure a sufficient sample size and to reflect the needs of particular localities and study objectives.

The study objectives which I pursued were articulated as a series of six hypotheses. These can be stated as follows:
1. Interaction between places is strongly influenced by distance, i.e. the greater the distance from the parish the less interaction there is with that parish. This phenomenon will be called the **distance effect** in this article. (Note in much geographical literature the phrase 'distance decay' is used.)

2. The distance effect itself decreases over time.

3. A sudden decrease in the distance effect is evident in the last quarter of the nineteenth century (as identified by Perry in Dorset).  

4. In the context of north Buckinghamshire, there are two distinctive scales of interaction:
   
   (i) up to about twenty kilometres. This is the supposed maximum walking and, later, cycling distance enabling regular face-to-face contact to be maintained; this normally being necessary for a marriage to take place. This **local** scale of interaction exhibits no directional bias;

   (ii) over twenty kilometres. At this **regional** scale there is strong directional bias to the south-east and the north-west (i.e. to London and the Midlands). An important channel of this movement being Watling Street, later supplemented by the railway.

5. At the **local scale** of the interaction there is a tendency for urban parishes to interact more strongly with other urban parishes than with rural parishes. Thus, at this scale, the socio-economic character is another variable, in addition to distance, which affects spatial interaction. In this study, parishes were allocated to an **index of agricultural occupation** on the basis of the 1831 Census, taken midway through the study period, which gives nine occupational categories for males over twenty years of age on a parish basis (information which is not available before or after this date at the parish level). Of the categories given the major divisions are between persons employed in agriculture, those employed in manufacturing, in retailing and crafts, as capitalists, bankers, professional and other educated men, non-agricultural labourers, others, and servants. Ideally we need to identify 'urban' occupations in order to identify 'urban' parishes, but there are great problems in doing this. If the aim is to define 'urban' in terms of a 'service' centre, and not as a location for manufacturing or crafts (which, in any case, often took place within a rural environment in the early nineteenth century), the only occupation listed which we could use would be retailing. Unfortunately, retailing is grouped together with crafts. It appears intuitively sounder, however, to identify agricultural occupations with a 'rural' location, and to assume that 'rural' and 'urban' characteristics are the inverse of one another, so that as one increases the other falls. Thus, I decided to use what I have called the index of agricultural occupation as a surrogate for allocating parishes to either a 'rural' or an 'urban' category.

The index was obtained by ascertaining the numbers employed as
farmers or labourers in agriculture, and dividing this total by the numbers of those known not to have been employed as such. Those employed as servants or others were completely excluded from the calculation as we do not know whether or not they were employed in an agricultural context. The index thus obtained for each parish, within the local scale of interaction, was used to allocate it to either a ‘rural’ or an ‘urban’ category. Parishes with an endex of 0.4 or above were categorised as ‘rural’, and those with less than 0.4 as ‘urban’. This figure is, of course, arbitrary, but it was in fact arrived at in this study by plotting the index for all parishes within the local field (as shown in figure 1b) and finding that, inter alia, the figure of 0.4 did clearly separate out what could be called an ‘urban group’ of parishes from the others.

6. There is some sort of negative relationship between the population size of a parish and the distance of interaction in a relative sense — i.e. the larger the population of a parish, the lower the proportion of marriage contacts over, say, twenty kilometres. In terms of absolute numbers (as opposed to proportions) of marriage distances, however, the larger the parish population, the greater is the contact over, say, twenty kilometres. (This hypothesis is in line with the discussion in the opening paragraphs of this article.)

- Techniques

The graphical and quantitative techniques now introduced allow a progressive analysis of the above hypotheses to be undertaken, and are of four main types:

(i) marriage contact fields;
(ii) chi-square analysis;
(iii) average marriage distances;
(iv) regression analysis.

(I) Marriage contact fields

These can be constructed by placing a grid, centred on the parish under study, over the area of interaction. Examples are shown in figures 1 and 2 where grids have been centred on the parish of Stony Stratford in north Buckinghamshire. This visual method specifically brings out any directional bias in spatial interaction and is probably the easiest method of summarising and analysing the data. Figure 1a shows the case study area divided into 25 grid cells, representing the ‘regional field’ discussed in hypothesis 4, and figure 1b shows the detail of the ‘local field’, divided, in this case, into sixty-four cells. Figures 2a and 2b show the number of marriage contacts falling in each of the grid cells, derived from figures 1a and 1b. In figure 2a note the strong north-west to south-east directional bias and the absence of any definite bias in the local field. This relates back to hypothesis 4, which could be said to be confirmed in this particular example. (A technique which can more objectively test this conclusion will be discussed in (ii) below.) Relating the numbers of marriage con-
tacts back to maps in this way is a useful reminder that the data being manipulated are, in fact, derived from a particular locality. Although the overall aim here has been stated as a search for generalisations, which can then be compared with similar results from other parts of the country, the detail of the analysis, especially when trying to explain specific anomalies, needs to be referred to the real world if any sense is to be made of the results. For example, the regional directional bias identified here may be readily understood by referring to the location of London and the urbanising Midlands, as well as by the orientation of the major lines of communication. Similarly, the general density and distribution of population in an area, particularly in upland Britain where physical features form barriers to movement, as well as channelling it, may have a pervasive influence on the pattern of spatial interaction.

Marriage contact fields, like those in figure 2, can be produced for successive periods in order to examine how this spatial interaction changes over time.

**Figure 1a.** Sketch map of the 'regional field', centred on Stony Stratford, showing the main settlements, Watling Street and the London and North-Western Railway (constructed in the 1830s).
Figure 1b. Sketch map of the 'local field'.

Figure 2. Observed marriage contact fields for Stony Stratford, 1834-1873. The figures in each grid cell indicate the number of marriage contacts from places in that cell with Stony Stratford. The local field shows the detail of the central grid cell of the regional field. Stony Stratford was identified as an 'urban' parish (see text) and its contacts with other 'urban' parishes are marked with an asterisk in the local field.
(II) Chi-square analysis

Hypothesis 5 proposed that socio-economic factors, as well as distance, would be important in influencing spatial interaction, especially when measured by marriage distances. Ideally, of course, we would wish to examine the socio-economic characteristics of the individual bride and groom, normally by recording their employment or social status, but this information, for both partners, is rarely available in the marriage registers. (Although it may be possible to discover it through the technique of nominal linkage; i.e. by cross-checking individual names from other sources, such as the census, where the required information may be found.)

An alternative method is to classify parishes into socio-economic types (see hypothesis 5 above) and to measure the interaction between both similar and dissimilar types. This is legitimate as long as the analysis undertaken uses aggregated interaction data; it would not be acceptable to analyse specific marriages in this way or to use very small samples, because they may not be representative of the parish as a whole.

Figure 2b uses the grid derived from figure 1b, with its centre positioned over Stony Stratford. It shows that Stony Stratford (which is identified as an ‘urban’ parish) had twenty-five contacts with other ‘urban’ parishes and forty-two contacts with ‘rural’ parishes within the local field. On the face of it, these figures show that Stony Stratford has more contact with ‘rural’ parishes than with ‘urban’ ones, but this would be to ignore the proportion of these two types of parish present, both in terms of their number and the population they contain. This could be taken into account by enumerating the number and population size of all ‘urban’ and ‘rural’ parishes within the area of the local field. However, an easier method, which does not require this detailed information because it remains constant (or ‘given’) no matter which parish’s contact pattern is being analysed, is to examine interaction data for a number of parishes. I set out below the extra-parochial marriage data for six parishes in north Buckinghamshire, located at a maximum distance of fifteen kilometres from each other (see figure 1b), and with ‘urban’ and ‘rural’ types spatially mixed, in order to reduce any impact that distance may have on the data. This is important because we are attempting to isolate the socio-economic factors from the geographic ones.

<table>
<thead>
<tr>
<th>OBSERVED DATA</th>
<th>extra-parochial marriage type</th>
<th>urban</th>
<th>rural</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>parish type</td>
<td>urban</td>
<td>52</td>
<td>120</td>
<td>172</td>
</tr>
<tr>
<td>where marriage took place</td>
<td>rural</td>
<td>9</td>
<td>94</td>
<td>103</td>
</tr>
<tr>
<td>total</td>
<td></td>
<td>61</td>
<td>214</td>
<td>275</td>
</tr>
</tbody>
</table>

A visual examination of these figures seems to show that, indeed, parishes of the same socio-economic type do interact more with each other than with parishes of other types. It is possible, however, to be much more precise in analysing this data by using a simple technique known as chi-square. Basically, chi-square compares an observed situation (as, for
example, the data given above) with one which we would expect if there were no association between the variables being investigated. The two variables in this case are, firstly (as shown in each row above), the socio-economic character of the parish in which the marriage took place (and where one of the marriage partners resided), and, secondly (as shown in each column) the socio-economic character of the parish from which the extra-parochial marriage partner came. We are interested in whether or not there is any association between these two variables.

We now need to compare this observed distribution with the expected distribution which can be easily calculated. For a given observed figure, its expected counterpart is derived by multiplying the row total by the column total and dividing by the grand total. Thus, the first observed figure of 52 has an equivalent expected figure of \( \frac{172 \times 61}{275} = 38.2 \).

This calculation produces expected values based on the assumption that there is no association between the two variables. Given the total number of marriages taking place in 'urban' parishes (i.e. 172) and the total number of marriages with 'urban' extra-parochial marriage partners (i.e. 61), a figure is calculated (i.e. 38.2) purely on the basis of the proportions of the 'urban' categories available within each of the two variables. Each of the expected values is calculated in the same manner, thus:

<table>
<thead>
<tr>
<th>Parish type</th>
<th>Extra-parochial marriage type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
</tr>
<tr>
<td>Parishes where marriage took place</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

It should be noted that an important limitation of chi-square is that not more than one-fifth of the expected values should be five or less. Clearly there is no problem in this case, but if the criterion is not met it would be necessary to combine two or more of the categories within each variable until it is. In this example there are only two categories (i.e. 'urban' and 'rural') so combination could not, in any case, be undertaken. It would have been quite possible, however, to have devised a socio-economic classification by allocating parishes not just into a broad or urban-rural dichotomy but into three, or more, categories. For example, where sample sizes are large enough, an 'urban' type could be defined as having an index of rurality of 0.3 or less (as in this study), an 'intermediate' type of between, say, 0.3 and 0.7, and a 'rural' type of over 0.7. Finer or different categories could of course be devised. Again it should be stressed that any classification needs to reflect the particular needs of the study. The categories within each of the variables used in chi-square should therefore be large enough not to contravene this one-fifth rule, but also numerous enough to examine characteristics thought important. It will be readily appreciated that the bigger the difference between the observed and expected values, the more likely it is that they are significantly different from each other, and therefore the more likely that our initial
hypothesis will be upheld. The chi-square technique involves calculating this difference then squaring it (i.e. multiplying it by itself) in order to get rid of any negative values, dividing it by the expected value so that the difference calculated is expressed as a proportion of the expected value, and then summing all the values obtained to give a composite chi-square statistic. This procedure is given by the formula:

\[ \text{chi-square} = \sum \frac{(0 - E)^2}{E} \]

where \( \sum \) simply means add up the individual items that follow,

\( 0 = \text{observed value} \)
\( E = \text{expected value} \).

The calculation is normally effected by constructing a table:

<table>
<thead>
<tr>
<th></th>
<th>E</th>
<th>(0 - E)</th>
<th>(0 - E)^2</th>
<th>(0 - E)^2 + E</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>38.2</td>
<td>13.8</td>
<td>190.4</td>
<td>5.0</td>
</tr>
<tr>
<td>120</td>
<td>133.8</td>
<td>-13.8</td>
<td>190.4</td>
<td>1.4</td>
</tr>
<tr>
<td>9</td>
<td>22.8</td>
<td>-13.8</td>
<td>190.4</td>
<td>8.4</td>
</tr>
<tr>
<td>94</td>
<td>80.2</td>
<td>13.8</td>
<td>190.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

\( \sum 17.2 \)

(Note: The apparent symmetry in the above table, giving the same (0-E) and thus (0-E)^2 values, is due to the fact that each of the two variables only has two categories: 'urban' and 'rural'. If more categories were to be used this would be unlikely to happen.)

The next step is to work out a figure called the degrees of freedom. This is simply a measure of how many chances for variation exists in the observed table of figures we started with. If we accept that the row and column totals are fixed, then the only chance for variation in terms of the columns is one, since once a value is entered in the first column the value in the second column is pre-determined. Similarly, if we examine the two rows, there is again only one chance of variation, since after the first value is entered the second is fixed. If, however, there had been, say, five rows, then the chance for variation would have been four, as the first four figures would be free to vary (assuming they did not exceed the total), leaving the fifth as pre-determined. Thus the degrees of freedom (or the total chances for variation which have called it) equals the number of columns minus one, multiplied by the number of rows minus one. In our case this is (2 - 1) \times (2 - 1) = 1. In order to assess the significance of the result, it is necessary to refer to either a chi-square table or graph (found in the standard textbooks). This will show that a figure of 17.2 with 1 degree of freedom falls well below the 0.1% 'critical value' of chi-square. This means that this could only be produced by chance less than 0.1% of the time (or one time in a thousand).

By convention, the observed distribution of data between any two
variables is taken as being ‘significant’ (i.e. that there is an association between them) if the chance or random element could be responsible 5% or less of the time. You should note, however, that this is only a convention, and that the ‘critical value’ of any chi-square statistic you calculate should always be quoted. In this case, we note that chance has not been eliminated (i.e. it is possible, though unlikely, that the figures were produced by chance), and that even if the ‘critical’ value had been, say 10%, this would still mean that chance plays a ‘small’ role even though, by convention, we say it plays ‘too big’ a role. The point is that the value of a technique like chi-square is that it enables words like ‘small’ or ‘big’ to be discarded in favour of a numerical value; it does not allow us to definitely ‘prove’ or ‘disprove’ a hypothesis. In fact, even though by using statistical jargon, we could say our result was ‘very significant’, all we have really done is to show that within the constraints of the table of data we have constructed, it is unlikely that the figures we have observed are randomly determined. We can only conclude that extra-parochial marriages are not randomly distributed between ‘urban’ and ‘rural’ parishes. The notion we have that it is ‘urban-urban’ and ‘rural-rural’ links which are over-represented (as compared with ‘urban-rural’ and ‘rural-urban’ links) is only added by inspection of the observed table. In other words, it is where the numbers fail that leads us to surmise this, not the value of the chi-square statistic itself. The latter can only indicate the strength, not the form, of a relationship.

Despite these important caveats, however, a technique like chi-square is more powerful than a simple visual inspection of the figures. This is because it allows us to quantify the relationship between two variables, to be precise in allocating the influence of chance, and, thereby, to be able to make direct comparisons with other chi-square results calculated with different data or by different researchers.

The chi-square test is a very valuable and simple technique which has many uses. It can, for example, test the significance of the directional bias observed in marriage contacts at the regional level, discussed in (i) above. If the data presented in figure 2a are taken as a display of observed values, we can proceed to calculate expected values. First of all, however, it will be apparent that, because so many of the cells in fig. 2a have nil values and many others are under 5, it is very likely that the expected values will not meet the one-fifth criterion discussed above. A check would confirm this to be correct. It is necessary, therefore, to combine cells so as to boost the value of each resulting group of cells. Bearing in mind that we wish to test for directional bias in a north-west to south-east direction, the 25 cells can be amalgamated into 4 cell groups, so that there is a north-west, north-east, south-east and south-west group. Ignoring the central cell (which is disregarded because it has no effect on directional bias) it will be seen that each of the 4 cell groups contains 4 whole cells and 4 half cells. This is because the 8 central vertical and horizontal cells each fall into 2 of the 4 cell groups. Thus, the total number of marriage contacts in the north-west cell group is $3 + 2 + 4 + (10 \div 2) + (3 \div 2) = 15.5$. Producing cell groups in this way also removes the distance variable from the analysis, since each of the 4 groups
is equidistant from the centre, thus the test will focus exclusively on
directional bias.

Proceeding on these lines, the following observed values are obtained:

<table>
<thead>
<tr>
<th>Cell Group</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>north-west cell</td>
<td>15.5</td>
</tr>
<tr>
<td>north-east cell</td>
<td>6.5</td>
</tr>
<tr>
<td>south-east cell</td>
<td>15.5</td>
</tr>
<tr>
<td>south-west cell</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41</strong></td>
</tr>
</tbody>
</table>

The calculation of expected values in this instance cannot be achieved
by using row, column and grand totals as in the previous example, be-
cause the data we have is not in this sense cumulative. Simply using com-
mon sense, however, we would expect, if there was no directional bias,
that each of the 4 cell groups would have an equal share of the total
number of marriage contacts available; in other words, each would have
41 divided by 4, or 10.25.

A chi-square calculation table is constructed in precisely the same man-
ner as above and a result of 11.2 is obtained. Similarly, we cannot cal-
culate the degrees of freedom on the basis of number of rows and num-
ber of columns. In this case, we simply subtract 1 from the total number
of variables. Therefore degrees of freedom equals 3. This makes sense if
we consider that, if the total is fixed, in this case at 41, then the first 3
cell-groups are free to vary, but once they are determined the fourth is
fixed.

Reference to a chi-square graph or table reveals that the difference be-
 tween the observed and expected values is between the 0.1% and the 1%
critical value of chi-square. In other words, there is by convention a
significant difference between the two and the visual impression of
directional bias obtained from fig. 2a is supplemented by a more objective
piece of evidence. As noted above, however, we should remember that
all we have really done is to show that the scatter of Stony Stratford's
extra-parochial marriage contacts is unlikely to be the result of random
processes. The notion that there is a north-west to south-east orientation
to the pattern is one which is added by looking at the data; the chi-square
statistic does not tell us this. All we can do is to rule out the idea that
the distribution is random, and we must articulate further hypotheses if
we are to try to discover the reason for this. For example, reference to
fig. 1a will show that Birmingham is situated in the north-west sector and
London in the south-east. The directional bias may have been due to
these two large towns, and we could test this possibility by doing the
analysis once again, excluding them. If the directional bias were thereby
removed, we may be strengthened in the notion that it was Birmingham
and London 'causing' it, although we should still not rule out the pos-
sibility of other 'causes' which we had not thought of.
Using chi-square with geographical data of this kind, where the grid, as the unit of measurement, is arbitrary, does require care. Our expected distribution of values, for example, was produced on the assumption that there was an equal number of potential contacts (or population) in each cell, or cell group. Clearly this is not the case, and we must refine our reasoning, and hence our conclusion, by constant reference to the realities of the geography of the area.

### Table 1. Marriage distance data for Stony Stratford, 1754-1913.

<table>
<thead>
<tr>
<th></th>
<th>(1) total marriages</th>
<th>(2) total extra-parochial marriages</th>
<th>(3) extra-parochial marriage %</th>
<th>(4) mean extra-parochial marriage distance (kilometres)</th>
<th>(5) median and quartile extra-parochial marriage distances (kilometres)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>lower quartile</td>
<td>median</td>
</tr>
<tr>
<td>1754-1793</td>
<td>370</td>
<td>108</td>
<td>29.2%</td>
<td>29.8</td>
<td>4.1</td>
<td>11.8</td>
</tr>
<tr>
<td>1794-1833</td>
<td>509</td>
<td>164</td>
<td>32.2%</td>
<td>23.9</td>
<td>2.1</td>
<td>11.3</td>
</tr>
<tr>
<td>1834-1873</td>
<td>381</td>
<td>115</td>
<td>30.2%</td>
<td>34.7</td>
<td>2.1</td>
<td>11.3</td>
</tr>
<tr>
<td>1874-1913</td>
<td>361</td>
<td>156</td>
<td>43.2%</td>
<td>49.0</td>
<td>2.2</td>
<td>21.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>(8) mean census population</th>
<th>(9) extra-parochial annual marriage rate (per 1000)</th>
<th>(10) gradient of regression line</th>
<th>(12) correlation coefficient (r)</th>
<th>(13) coefficient of determination (100r²)</th>
<th>(14) % of extra-parochial marriages used in regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>1754-1793</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1794-1833</td>
<td>1564.7</td>
<td>2.6</td>
<td>8.9</td>
<td>—2.39</td>
<td>—0.94</td>
<td>86.6%</td>
</tr>
<tr>
<td>1834-1873</td>
<td>1873.7</td>
<td>1.5</td>
<td>5.1</td>
<td>—2.03</td>
<td>—0.92</td>
<td>84.3%</td>
</tr>
<tr>
<td>1874-1913</td>
<td>2070.7</td>
<td>1.9</td>
<td>4.4</td>
<td>—1.87</td>
<td>—0.86</td>
<td>74.4%</td>
</tr>
</tbody>
</table>

### (III) Average marriage distances

In addition to the examination of successive marriage contact fields, the changing nature of spatial interaction can also be analysed by reference to marriage distance data which has been manipulated in certain ways. For example, it is possible to compare the four periods by looking in turn at the following data in Table 1:
Column 3 percentage of extra-parochial marriages.

Column 4 the mean extra-parochial marriage distance. The mean is what we normally term the average. It is simply arrived at by adding each individual marriage distance and dividing the total by the number of distances used.\textsuperscript{7}

Columns 5, 6, 7 the mean and quartile extra-parochial marriage distances. The mean, as shown in column 4, gives no indication of the range of spread of values about it and is badly affected by extreme values. The median,\textsuperscript{8} on the other hand, is not so affected, as it is simply the central number, below which, and above which, fifty percent of all the numbers fall. For example, if there are twenty-three distances arrayed in ascending order, the median is the twelfth distance. Similarly, the upper quartile is the median between the actual median and the highest value, and the lower quartile is the median between the actual median and the lowest value.\textsuperscript{9} The calculation of median and quartile distances gives some indication of the spread of values, and is, therefore, probably more suitable than the mean for comparing marriage distances.

Columns 8, 9, 10 the marriage rate\textsuperscript{10} is the number of marriages in a given year expressed as a rate per thousand of the total population. In the example, only the last three periods have rates calculated for them because of the unreliability of population data before the Census commenced. Marriage rates have been used because they tell us, for a given population, how many marriages there were (according to the registers). This may have an effect, although this is speculation, on the marriage distance patterns produced, both as a result of socio-economic or cultural factors and also as a result of the geographical availability of suitable marriage partners, which may be particularly problematic in a small parish.\textsuperscript{10}

When using marriage rates, however, it must not be forgotten that an important factor is the age structure of the population to which it refers. For example, if there were a higher than average proportion of persons in the 20-30 age group we would expect, regardless of any socio-economic, cultural or geographic influences on marriage, that the marriage rate would be boosted. This is not a factor that has been directly taken into account in this case study, although it would have been possible to do so using the published Census, from 1821 onwards, when information about age is first included. It is, however, a factor which should not be overlooked.

(iv) Regression analysis

Regression analysis\textsuperscript{11} involves the comparison of two variables in such a way that we can see how a change in one variable results in, or is the result of, a change in the other. The two variables of concern here are distance and the number of marriage contacts. For every extra-parochial marriage we can, of course, calculate its marriage distance, but every
marriage distance is a unique and specific measurement. In order to see the effect of distance on the number of marriages, we need to group the marriages in a certain way. This is done by allocating each marriage to a distance band, by drawing a series of concentric circles, around the parish church under study, in such a way that each successive circle has the same increase in radius as the last. In this case study a series of distance bands were chosen, each with a width of five kilometres. Kilometres were used, rather than miles, simply because the marriage distance was not measured directly on the map, but calculated from the six figure National Grid Reference (based on kilometres) for the two parish churches, using the Pythagoras theorem. Five kilometre distance bands were chosen because any smaller distance did not allow at least one marriage contact to fall within each band, up to a one hundred kilometre limit, beyond which bands containing no contacts start to appear. Column 14 of Table 1 shows the percentage of extra-parochial marriages included as a result of imposing this limit.

Another important decision which had to be made was whether or not to include the number of intra-parochial marriages in the first distance band (i.e. 0 to 5 kilometres). On the one hand it could be argued that because, in 1834 to 1873 for example, 266 marriages took place in Stony Stratford between people who had a 'zero' marriage distance, this is just as crucial in measuring the distance effect on the selection of marriage partners as the fact that eleven marriages took place with people from another parish. On the other hand, one could argue that because we are only concerned to examine interaction between different places, we can ignore the number of intra-parochial marriages. Obviously, whichever way the decision is made will have a dramatic effect on the analysis of data, simply because the number of intra-parochial marriages is so large. In this case study, I chose to use only extra-parochial marriages, mainly because it seems that the majority of earlier studies do the same, and comparison between findings is a very important aim of any work of this nature.

The way in which all these problems are perceived and confronted must, of course, depend upon the preferences, aims, and difficulties encountered by each researcher. It is important to remember, however, that such decisions can have a pervasive effect on the results obtained and they must therefore be only considered with a full realisation of the implications involved.

These problems are a good example of the additional difficulties thrown up by the use of new techniques which are, nevertheless, worth tackling because of the additional understanding we are able to gain.

Some results of these procedures are shown in Table 2. Column 1 indicates the distance band, and column 3 the number of marriages falling in that band. Notice that column 4 is labelled standardised number of marriages. This is because the number of marriages at any given distance must be standardised for area. The reason is that, as distance increases away from the study parish, there are potentially a greater number of parishes supplying marriage partners. As described above, when a series of concentric rings is drawn outward from the study parish, the area of
<table>
<thead>
<tr>
<th>(km.)</th>
<th>(1) Distance band order</th>
<th>(2) Ratio of area to first distance band</th>
<th>(3) Number of marriage contacts</th>
<th>(4) Standardised number of marriage contacts</th>
<th>(5) Logarithm of column 4 (y axis)</th>
<th>(6) Logarithm of column 1 (x axis)</th>
</tr>
</thead>
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<td>0.0000</td>
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<td>3</td>
<td>34</td>
<td>11.3333</td>
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<td>16</td>
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<td>4</td>
<td>0.5714</td>
<td>-0.2431</td>
<td>0.6021</td>
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<tr>
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<td>7</td>
<td>9</td>
<td>6</td>
<td>0.6667</td>
<td>-0.1761</td>
<td>0.6990</td>
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<tr>
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<td>10</td>
<td>12</td>
<td>2</td>
<td>0.1538</td>
<td>-0.8130</td>
<td>0.8451</td>
</tr>
<tr>
<td>(31-35)</td>
<td>9</td>
<td>17</td>
<td>2</td>
<td>0.1176</td>
<td>-0.9296</td>
<td>0.9542</td>
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<td>(36-40)</td>
<td>12</td>
<td>19</td>
<td>2</td>
<td>0.1053</td>
<td>-0.9776</td>
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<tr>
<td>(41-45)</td>
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<td>21</td>
<td>1</td>
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<tr>
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<td>13</td>
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<td>3</td>
<td>0.1304</td>
<td>-0.8847</td>
<td>1.0792</td>
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<td>14</td>
<td>25</td>
<td>1</td>
<td>0.0400</td>
<td>-1.3979</td>
<td>1.1139</td>
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<td>1</td>
<td>0.0741</td>
<td>-1.1302</td>
<td>1.1461</td>
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<td>29</td>
<td>1</td>
<td>0.0370</td>
<td>-1.4318</td>
<td>1.1761</td>
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<tr>
<td>(66-70)</td>
<td>12</td>
<td>31</td>
<td>2</td>
<td>0.0838</td>
<td>-1.0141</td>
<td>1.2041</td>
</tr>
<tr>
<td>(71-75)</td>
<td>11</td>
<td>33</td>
<td>8</td>
<td>0.2424</td>
<td>-0.6155</td>
<td>1.2304</td>
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<tr>
<td>(76-80)</td>
<td>10</td>
<td>35</td>
<td>3</td>
<td>0.0857</td>
<td>-1.0670</td>
<td>1.2553</td>
</tr>
<tr>
<td>(81-85)</td>
<td>9</td>
<td>37</td>
<td>1</td>
<td>0.0270</td>
<td>-1.5686</td>
<td>1.2788</td>
</tr>
<tr>
<td>(96-100)</td>
<td>5</td>
<td>40</td>
<td>2</td>
<td>0.0513</td>
<td>-1.2899</td>
<td>1.3010</td>
</tr>
</tbody>
</table>

Each successive ring is greater than the inner ring. The greater the area, the higher the population it can potentially contain and therefore the more marriage partners it could supply. The number of marriage contacts each ring provides is therefore standardised so that it is expressed as the number of marriages per unit area. This is, in fact, less complicated than it sounds, as the unit of area used is that contained in the innermost ring. If this inner ring is said to have an area of one, then, by using the formula \( \pi r^2 \) for the area of a circle, it can be shown that the second ring has an area of three, the third of five, the fourth of seven, the fifth of nine etc. The number of marriage contacts in the second ring are therefore divided by three, the number in the third by five, and so on, to give the standardised number of marriages for each successive distance band away from the study parish. The ratios to be used in each case are shown in column 2.

It is obvious that this standardisation procedure would be more reliable if it were based on the actual population in each ring rather than the area of the ring. The difficulty here is, of course, that we do not have reliable population statistics for parishes falling within each ring until the 1801 Census, and, even after this date, the population figures may hide much inter-decennial variation in actual numbers. The distribution of population
in north Buckinghamshire and adjacent areas, was, throughout the study period, relatively uniform in the sense that there were no areas of sparse population. But in parts of the country where this is likely to be a problem, population figures, rather than land area, should be used if possible. Whether or not this can be done, constant reference to the realities of the local geography of an area (for example, figures 1a and 1b) should guide the interpretation of the results. It can be noted, for instance, that the number of marriages (column 3 of Table 2) in the 81-85 kilometre distance band goes dramatically against the trend of decreasing marriages with increasing distance, probably London and Birmingham are included within this band. If we were able to standardise on the basis of population in this case study it is likely that this band would conform more closely to the trend.

Once the data have been prepared in a suitable form, they can be used to construct a scatter graph. Most graphs, such as those shown in figures 3 and 4, are made up of two axes: a horizontal (or x axis) and a vertical (or y axis). These two axes represent the two variables which are being compared. We want to see how a change in one variable (called the independent or x variable) affects the other variable (called the dependent or y variable). In our example, the independent variable is distance, and the dependent variable is the standardised number of marriage contacts. To produce a scatter graph each point is located with reference to these two axes; for example, if there were fifteen marriages at five kilometres, the point representing this would be level with fifteen on the number of marriages axis and with five on the distance axis. Each point is plotted in the same way on the graph.

Figure 3. Graph showing the relationship between standardised number of marriages and distance in Stony Stratford, 1834-1873.

Figure 4. Double-log graph showing the relationship between standardised number of marriages and distance in Stony Stratford, 1834-1873.
Now, it has been hypothesised (see hypothesis 1) that, as distance increases, the number of marriage contacts decreases (i.e. a distance effect). We therefore expect to see a series of points which trend from the top left-hand side of the graph to the bottom right-hand side. Reference to fig. 3 (based on data from columns 1 and 4 of Table 2) will show that this does, in fact, happen, although the trend is not regular but seems to indicate that, with increasing distance, the rate in the reduction of marriage contacts decreases. Figure 3 also shows the best-fit line, (i.e. that which best summarises the trend of the points), as a steep curve.

Regression analysis involves the construction of a best-fit line mathematically, to produce a regression line which can be expressed as a mathematical equation. It is this equation which specifically defines the relationship between the two variables. Although curves are susceptible to mathematical expression, the calculations are complex. One way of getting around this problem is, rather than have two axes with uniform scales, to construct scales based on logarithmic numbers. This produces an axis which increases proportionately rather than in absolute terms, as shown in figure 4 (based on data from columns 5 and 6 of Table 2). When this double-log graph (as it is called) is used with most data which analyses the distance effect, a straight line is produced; i.e. the trend of the points approximates to a linear, or straight-line, relationship. This linear regression line has a relatively simple mathematical equation:

\[ y = ax + b \]

where \( y \) (as the dependent variable) is the standardised number of extra-parochial marriage contacts
\( x \) (as the independent variable) is distance
\( a \) is the slope, or gradient, of the line (i.e. the greater \( a \) is the steeper is the line)
and \( b \) is the value of \( y \) where the line crosses the \( y \) (vertical) axis.

The gradient of the regression line, \( 'a' \), in distance effect equations invariably slopes from top left to bottom right, and, by convention, this is termed a 'negative' slope, with \( 'a' \) being given as a negative value. If the regression line sloped from bottom left to top right the value of \( 'a' \) would be positive. In figure 4, \( 'a' \) has a value of \(-2.03\), and reference to Table 1 will show how this value changes for each of the four time periods (column 11). If the distance effect decreases over time, therefore, we would expect the value of \( 'a' \) to also decrease.

The regression line equation, therefore, mathematically describes the trend of the data. However, it does not indicate how close the fit is between the line and the points scattered around it on the graph. To measure this, the correlation coefficient is used, which ranges from +1, through 0, to —1. Zero indicates no correlation at all; i.e. the points are randomly distributed right across the graph in such a way that there is absolutely no trend. A value of one indicates perfect correlation; i.e. every point is exactly on the regression line. The coefficient is either positive or negative, depending on whether the gradient of the regression line is positive or negative as described above.

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The correlation coefficient of the regression line shown in figure 4 is — 0.92, which indicates that all the points are very close to the line. In fact, the regression lines for each of the four periods in this example exhibit very high correlation coefficients, which tends to mean that a great deal of faith can be invested in the ability of these regression analyses to describe the marriage distance data. This is further supported by another necessary statistical technique, which we must carry out, called the standard error of the coefficient. This indicates how ‘significant’ the correlation coefficient is, i.e. how probable is it that the data was not generated by a random process. In general, the larger the sample size (i.e. the greater the number of points) together with a high correlation coefficient, the more ‘significant’ the correlation can be said to be. In the example, all the correlation coefficients produced were highly significant; i.e. all had less than 1 time in 1000 of being chance results. The correlation coefficients do, in fact, seem to vary in relation to the percentage of extra-parochial marriage data used in the regression analysis (column 14 of Table 1). This is, arguably, to be expected, and shows that the results are influenced by the decisions taken in regard to the width of the distance bands and their outer limit.

One further useful technique is termed the coefficient of determination which is calculated in column 13 of Table 1. It is quite simply derived by squaring the correlation coefficient and multiplying the result by 100. Its usefulness is that it tells us how much of the total variation in the dependent variable is associated with, or ‘explained’ by, the variation in the independent variable. In other words, we can say that, using the 1834-1873 data, 84.3% of the variation in the standardised number of extra-parochial marriages is ‘explained’ by the distance between the parish of residence of the groom and that of the bride.

Conclusion

The techniques described above were used to analyse spatial interaction in six parishes in north Buckinghamshire from 1754-1913. All six of the hypotheses stated were supported with one important aberration.

A distance effect was found in the data for all six parishes, and the strength of this effect generally decreased over time. However, in three of the six parishes the second period (1794-1833) was marked by an increase of the distance effect (see column 11 of Table 1 which shows the Stony Stratford figures). The same three parishes also showed relatively high marriage rates (both extra-parochial and total) in this period (see columns 9 and 10). The distance effect in the other three parishes steadily decreased in strength over time, and there was not this variation in the marriage rates. There seems to be, therefore, some sort of relationship between a steadily decreasing distance effect and stable marriage rates on the one hand, and high marriage rates and an increasing distance effect on the other.

Reference to the mean and median distances (as for example in columns
4-7 of Table 1) also seems to indicate a lowering of marriage distances between 1794 and 1833. In addition, the extra-parochial percentages (column 3) show an increase at this time a little above that expected from the overall trend throughout the period, and this seems to confirm the evidence of the marriage rates that, although there were a higher proportion of extra-parochial marriages, the distances which they mark out are less than expected.\(^{31}\)

Are there any reasons why spatial interaction was more restricted than expected, and marriage rates abnormally high in this period? (Note, however, that because we do not have reliable population data before this period, we cannot, with certainty, state that the rates had risen at this time; although see Note 22.) The very fact that we begin to ask questions such as these, which arise directly out of the application of the techniques demonstrated, forges the essential link between a perhaps mechanical and pedestrian exercise and the focus of historical and intellectual interest which is the real objective of our endeavours. In the same way that we noticed one figure in particular on Table 2 as being a deviant against the overall trend of decreasing numbers of marriages with increasing distance (i.e. in the 81-85 kilometre band), asked why, and we discovered London and Birmingham fell in that band, we can ask questions about the overall thrust of the results; particularly if they are not what we expected. These questions must include, of course, a realisation that the particular technique employed and a particular procedure followed may themselves, and not the historical reality, be responsible for the pattern of the results. But when we find that a combination of different techniques point to a similar conclusion, we can have a lot more faith that our results are genuinely indicating something of interest.

It is beyond the scope of this article to discuss any possible historical reasons for this apparent retrenchment of marriage horizons, in the last decade of the eighteenth century and first decades of the nineteenth century, beyond suggesting that the reasons may include the level of wage rates and the operation of the Poor Law at the time. I have instead been concerned with means rather than with ends, and have therefore tried to show how a series of techniques of increasing complexity, but not beyond the reach of the amateur local historian, can be used in the analysis of spatial interaction based on marriage distance data. The techniques demonstrated here do not, by any means, constitute an exhaustive list, but they do enable, with diligent and careful use, a greater degree of understanding to be brought to bear upon a particular historical topic.
NOTES

3. The most important historical, geographic, and demographic studies using marriage distances to examine spatial interaction and mobility are:—
5. The six parishes incorporated into the 'parish type where marriage took place' variable are Stony Stratford (urban), Newport Pagnall (urban), Haversham (rural). Little Brickhill (rural), Loughton (rural), Tyningen (rural). Parishes incorporated into the 'extra-parochial parish type' are, of course, all the parishes within the local field.
10. D. Mills, 'Aspects of Marriage: an example of Applied Historical Studies', a Social Science publication, The Open University 1980. Mills contrasts market towns in lowland England with parishes, such as those in Wharfedale, with a large land area but small scattered population (pp. 8-10).
12. The Pythagoras theorem simply states that the square of the hypotenuse (the side of a right-angled triangle which is opposite the right angle) equals the sum of the square of the other two sides. Thus, if we wish to work out the straight line distance between two parish churches using the National Grid Reference, we first have to ascertain the six figure grid reference for each church. This is done either by reading it from an Ordnance Survey map, or by reference to a suitable gazetteer. The first three figures of the grid reference refer to the 'easting' of a church from the National Grid's origin, and the second three figures refer to its 'northing'. Each of these pairs of three figures will locate the church to the nearest 0.1 kilometre. In order to work out the grid reference of the third point of the triangle, the point which makes the right angle, we simply take the lowest 'easting' of the pair of parishes and the lowest 'northing', to make a composite six figure grid reference. For example, if the two parish churches are located at 415370 and 455340 respectively, the grid reference of the right-angled point of the triangle is 415340. It is now a simple matter to calculate the 'easting' distance and the 'northing' distance of the two parish churches from this right-angled point. The former being:
   \[ 45.5 - 41.5 = 4.0 \text{ kilometres} \]

and the latter:

\[ 37.0 - 34.0 = 3.0 \text{ kilometres} \]

The distance between the parish churches is the hypotenuse of the triangle and is found as described above:

\[
\text{(hypotenuse)}^2 = 4^2 + 3^2 \\
= 16 + 9 \\
= 25
\]

\[ \text{hypotenuse} = \sqrt{25} = 5 \text{ kilometres} \]

This method is particularly useful for the calculation of longer distances, because it is not affected by the inaccuracies which inevitably result from directly measuring the distance on the map using a ruler.
13. The reason it is necessary to avoid zero marriage contacts falling in any distance band is because the regression analysis undertaken involves using the logarithm of the number of marriage contacts (as described below) and, as the log of zero does not exist, their inclusion would make a nonsense of the procedure.

14. Few studies discuss these sorts of problems openly, but it is usually apparent from the data presented that the decision has been taken to exclude intra-parochial marriages. For example, compare Table 1 (page 124) with figs 3 (p. 130) and 6 (p. 137) of Perry (1969).

15. See R. Watson, 'Measuring Migration' Local Population Studies, No. 21, 1978, p. 61, for a detailed description of how these ratios are calculated.

16. Bradley, pp. 43-4. If you are unsure how to obtain the logarithm of a number, consult a standard textbook. Nowadays, of course, logs are also available as a function on many pocket calculators. You should particularly note, however, that the convention of giving the logarithms of numbers less than 1.0 as 'bar' logs is misleading when used in regression analysis. For example, the log of 0.5714 is normally given as 1.7569. What this means mathematically, however, is $-1 + 0.7569 = -0.2431$. It is this latter figure which must be used to plot figures on the graph. Similarly, the log of 0.0513 is usually given as 2.7101, whereas mathematically this means $-2 + 0.7101 = -1.2899$.

You should also note that the use of logarithms in this way, to 'transform' the data so that they approximate to a straight line, produces what is called double-log graph. There are some problems involved in using these graphs which mean that you should only use them as indicative of the distance effect and in conjunction with other techniques, as in this paper. However, the graph gives a very succinct description of the distance effect, thus enabling comparisons to be made between sets of data, and it is relatively easy to fit and interpret. See P. J. Taylor, 'Distance Decay in Spatial Interaction', Concepts and Techniques in Modern Geography, No. 2, 1975.

18. Bradley, pp. 36-9. Notes, that the particular measure used in this article is the product-moment correlation coefficient, and, as Bradley states (p. 39) the method is given in the standard textbooks.
21. An examination of the evidence presented in Peel, Constant, and Kuchemann, et al., (see Note 3) also gives some very tentative support to this observation, although the way the data are presented in these papers does not allow any firm conclusions to be drawn.
22. J. T. Krause, 'Some neglected factors in the English Industrial Revolution', Journal of Economic History, Vol. 19, 1959 (reprinted in M. Drake, Population in Industrialisation, London, 1969): '... in England it is relatively certain that the marriage rate rose sharply in the late eighteenth and early nineteenth centuries and then fell in the 1830s. The suggested causes of this development are many: early industrialisation, with its child labour, the Poor Laws, enclosure, and mining.' (p. 106). See also page 109, which mentions 'cultural disorganisation' as a probable cause.
THE POPULATION OF WORCESTER IN 1646

Ian Roy and Stephen Porter

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For the historical demographer the period of the Civil Wars is still something of a mystery. From the patchy evidence which has survived it is clear that in some areas of England the 1640s were a time of demographic crisis in which the population growth of the previous century was halted or even, in some communities, put into reverse. As with other crises, the point of maximum interest is unfortunately also one of minimum data. Even the most comprehensive statement of population trends in England which we have — the graph of vital rates compiled by the Cambridge Group — is incomplete at this point. The factors which were in part responsible for this demographic crisis — war damage and disruption, economic and social dislocation, the onset of plague and other diseases resulting from the wars — also interrupted the normal practice of parochial registration. The amalgamation of parishes during the Interregnum continued this process. As a result many of the sources which are most useful for demographers are missing for this period.

Although civil war conditions destroyed some forms of evidence in these years they created others which can be used to supply some of the deficiencies. Military authorities, for example, commonly required to know the extent and nature of the populations of which they had charge, the tasks which they could perform, or the food supplies which were available to them. Typically, the governor of a town might consider it prudent to order his subordinates to enumerate the citizenry and classify them for various tasks; the better to expel some, recruit others and tax the remainder. The royalist high command at Oxford listed lodgers occupying scarce housing in the city, and some use has been made of these records by historians of civil war Oxford.1 At Chester the governor ordered a census of the inhabitants during the siege of the city in 1646 which is even more informative.2 For Worcester, too, enumeration for wartime purposes has survived and can be used by demographers.

Largely because of its important cloth industry Worcester had been an expanding and prospering city before the Civil War and it had a vital role to play after 1642. Garrisoned by the royalists from the autumn of that year until its surrender in July 1646, it was of considerable military importance, strategically situated at the junction of several roads and the
busiest waterway in England, and supplying essential munitions for the king. The effects of the Civil War in the Severn region were severe and Worcester was adversely affected by the interruption of its vital cloth trade, the destruction of a part of its stock of housing, high wartime taxation and an influx of refugees from the surrounding war-torn countryside. With the series of defeats of the king's forces in 1645 and early 1646 Worcester's position as a garrison deteriorated and as the parliamentarian army prepared to besiege the city the governor, Colonel Harry Washington, ordered that a survey be made of the inhabitants and the provisions available. This was later supplemented by an enumeration of the soldiery. Fortunately a record of the course of the war in the city was being kept by a royalist gentleman, Harry Townshend of Elmley Lovett, and he noted the results of the survey in his diary.

It was a survey of 'the number of Householders, the number in famiyle & what quantity of monthly provision every one hath ready against a Seidge'. It is dated 15 April 1646, but whether it was actually drawn up on that day or over a number of days previously is uncertain. The survey is arranged by wards and it is possible that it was compiled by the four constables in each ward who, amongst other duties, were responsible for the collection of the monthly taxation levied by the royalists and consequently had a detailed knowledge of the households in their wards. Presumably they would have been accompanied by a number of soldiers. One ward is left unnamed. Of the three areas not included, St Michael's parish and the Cathedral precincts formed an enclave of territory within the city but outside its jurisdiction and they were specifically excluded from the survey, and St Clement's lay entirely on the west side of the river Severn beyond the defences. It is therefore most likely that the unnamed ward was St Nicholas.

The enumerators, reflecting Washington's concern to know how many of the inhabitants in his care could provide for themselves, and how many would soon require help if a siege were prolonged, divided the civilian population into two categories: those householders who had provisions in store and those who were unprovided and poor. They further distinguished between the number of householders and the number of their dependants. The figures, as they are presented in Townshend's manuscript, are as follows.

<table>
<thead>
<tr>
<th>Ward</th>
<th>provided</th>
<th>persons in family</th>
<th>unprovided</th>
<th>persons in family</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ward</td>
<td>189</td>
<td>24</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>All Saints Ward</td>
<td>290</td>
<td>1,459</td>
<td>56</td>
<td>232</td>
</tr>
<tr>
<td>St Andrew's Ward</td>
<td>161</td>
<td>259</td>
<td>113</td>
<td>259</td>
</tr>
<tr>
<td>St Martin's</td>
<td>188</td>
<td>1,030</td>
<td>92</td>
<td>271</td>
</tr>
<tr>
<td>St Peter's</td>
<td>114</td>
<td>599</td>
<td>73</td>
<td>285</td>
</tr>
<tr>
<td>(St Nicholas)</td>
<td>47</td>
<td>248</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td></td>
<td>989</td>
<td>4,189</td>
<td>358</td>
<td>1,487</td>
</tr>
</tbody>
</table>
As Table 1 shows the list is deficient or in error in three places. Firstly, the figure for the number of dependants in the families of the 'provided' householders in St Andrew's ward is clearly too low, 259 having been mistakenly entered under the families of both 'provided' and 'unprovided' householders. Secondly, the enumerators did not distinguish between the number of householders and the number of their dependants in St Nicholas ward. Thirdly, the number of persons in the families in the 'provided' category in High Ward is missing. The error in St Andrew's ward can be corrected simply by adjusting the wrong number to fit the given total in that category, producing a figure of 853. The figure for 'unprovided & pcore' in St Nicholas ward can be broken down by calculating the mean ratio between householders and family in the 'unprovided' category in the other five wards and dividing the 360 given in the same proportion. This suggests that there were 87 householders and 273 'persons in family' in that group. The missing figure for High Ward can be supplied.
in a similar way. The mean household size for the 'provided' category in the five wards with complete figures was 6.24 persons. Given that the number of householders in High Ward was 189 this method produces a figure of 990 dependants there. The table can therefore be revised thus:

<table>
<thead>
<tr>
<th>Ward</th>
<th>provided persons in family</th>
<th>unprovided persons in family</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>189</td>
<td>990</td>
<td>1,283</td>
</tr>
<tr>
<td>All Saints</td>
<td>290</td>
<td>1,459</td>
<td>2,037</td>
</tr>
<tr>
<td>St Andrew's</td>
<td>161</td>
<td>853</td>
<td>1,386</td>
</tr>
<tr>
<td>St Martin's</td>
<td>188</td>
<td>1,030</td>
<td>1,581</td>
</tr>
<tr>
<td>St Peter's</td>
<td>114</td>
<td>599</td>
<td>1,071</td>
</tr>
<tr>
<td>St Nicholas</td>
<td>47</td>
<td>248</td>
<td>655</td>
</tr>
<tr>
<td></td>
<td>989</td>
<td>5,179</td>
<td>8,013</td>
</tr>
</tbody>
</table>

It is rather more difficult to estimate the populations of the two missing areas of St Clement's and St Michael's, given the absence of suitable contemporary data. As demographic sources such as the Protestation and Poll Tax returns were based upon parishes and not wards, and the boundaries of the two sets of administrative units did not coincide, the returns are not comparable with the 1646 survey. The Hearth Tax was collected by wards but unfortunately St Michael's was not included with the city in the returns for the 1660s. Those for Michaelmas 1673 and Lady Day 1674 and the assessment of Michaelmas 1678, however, include St Michael's and all the city wards. An index combining the number of taxpayers and the number of hearths in these returns suggests that St Michael's was 9.1 per cent of the size of the six wards which were surveyed in 1646: about 730 inhabitants to the city's 8,000. If the same method is applied to St Clement's, and the three Hearth Tax returns extant for 1662 and 1664 are included in the index, it can be shown to have been 5.0 per cent of the size of the other six wards; i.e. about 400 inhabitants in 1646.

Caution is needed in interpreting these figures, however. A static distribution of population between the administrative units in the city over a period of more than thirty years has been assumed, and two sources which were drawn up for different purposes and in different circumstances have been correlated. Our knowledge of what was happening locally at the time brings such calculations closer to reality. A high figure for St Michael's can be justified by the special conditions of 1646, for although it was less densely populated than were the more central wards, its known royalism, its spacious housing — which included the Bishop's palace and the fine dwellings of the cathedral clergy — and its privileged position outside the jurisdiction of the city government, fitted it to receive the royalist clergy, country gentlemen and their numerous followers who fled to Worcester for refuge. As a result it may have had, as we shall see, a larger number of inhabitants than before the war, or after the surrender. On the other hand, a population of 400 or so for St Clement's seems, in
the circumstances of 1646, unrealistically high. By the fourth year of civil war the population remaining on the margins of the city was reduced. The city defences on the west side of the river — which consisted of a small bridgehead beyond the Severn Bridge, incorporating a drawbridge — gave protection to only a small part of the ward, and most of the houses outside these defences were demolished. It can be assumed that by the spring of 1646, as the likelihood of a siege increased, most of the inhabitants had removed to more secure shelter, either within the city or scattered amongst the nearby villages. When the parliamentary army laid siege to Worcester, erecting artillery emplacements in St John’s parish to the west, St Clement’s became a no-man’s-land between the attackers and the city. In these circumstances it would be safer to assume that only 100-150 persons remained in the ward. The addition of these supplied figures for St Michael’s and St Clement’s to the total provided by the governor’s survey indicates a population for Worcester in April 1646 of about 9,000.

In addition the city possessed a garrison of soldiers which cannot be considered separately from the civilian population. The forces in the city had to be paid for by the householders, and, in order to estimate their cost, the governor ordered a survey to be made of the garrison. This was carried out on 29 May 1646, shortly after the siege had begun. It revealed a total of all sorts of soldiery in the city, excluding the Gentlemen and all the City bands, of 1,507. The size of the garrison had fluctuated widely during the course of the war, but this figure accords well with what we know from other sources. The core consisted of three foot regiments, the largest being that of the governor, while the smallest one was provided by the townsmen. To this were added the remnants of at least a dozen others, some posted from the main royalist army, others in flight from the screen of fortified country houses and subsidiary garrisons around Worcester as they fell to the advancing parliamentary forces. It is clear that a considerable number of disbanded or ‘reformed’ officers and soldiers ended their civil war careers at Worcester.

Those members of the garrison who were from outside Worcester were likely to leave the city at its surrender, but those recruited locally should be counted in with the civilians in any estimate of the population in 1646. As well as the regiment of townsmen the other units may well have replaced casualties and deserters by local men during their stay in the city, for military service was an attractive alternative to probable unemployment, heavy taxation and the other burdens imposed on the citizenry by the governor. If this was indeed the case it may account for the authoritative estimate provided for parliament that 2,000 of the 3,000 in arms who surrendered in 1646 were townsmen. As we have seen, only a half of the 3,000 were actually enumerated as soldiers in the garrison. The remainder were no doubt largely members of the trained bands, who were deemed to be inhabitants for the purposes of the survey of civilians made in April. The garrison was, therefore, apparently made up of 1,000 soldiers from outside the city and 500 citizen soldiers who had been excluded from the April survey, but were included in the listing of the military made on 29 May. Adding these to the population previously estimated gives a total of
9,500 inhabitants within the defences of Worcester in 1646, with a further 1,000 regular troops temporarily stationed there.

To place the figures derived from the two surveys of 1646 in context, and to assess their significance, it will be helpful to compare them with what we know of the pre-war population of the city. The historian of sixteenth-century Worcester suggests that the city may have grown in size from 4,000 to 8,000 inhabitants over the previous eighty years. Surviving parish registers indicate a steady rate of natural increase and there is abundant evidence that the city, with its expanding cloth trade, pulled in migrants from the countryside. In 1637, however, plague struck a severe blow — it is likely that over 1,000 people died during the outbreak — and demographic growth was temporarily halted. There was no doubt some recovery by the time that the Protestation Returns were made in early 1642. These supply the number of males over eighteen years of age and survive for all of the city parishes, but not for St Michael's. The evidence suggests that there was a certain degree of under-registration. A sheet was submitted with the returns for St Andrew's listing those adult male parishioners who were away 'upon theire necessary affaires ... and cannot conveniently be at home by the tyme that we must returne these same'. The proportion of absentees was 8.5 per cent of those listed as actually taking the oath. There is no indication that such absentees were included in the returns for the rest of the city and so the numbers listed for the other parishes have been increased in the same proportion. This process yields a total of 1,842 adult males. To convert this figure to an estimate of total population a multiplier of 3.6 is appropriate for a town with a comparatively high birth rate, as Worcester had. This produces a population estimate of 6,630. A figure for St Michael's must be added. The Hearth Tax data for the 1670s discussed earlier indicates that St Michael's then contained 8.6 per cent of the population within the city boundaries (as opposed to the six wards surveyed in 1646). Application of this percentage to the estimate of the city's population produces a figure of 575 persons in St Michael's in 1642. Allowance should also be made for the two suburban areas lying beyond the city boundaries. To the north lay the Tything of Whistones, where a listing of the inhabitants made in 1631 had included 350 people. The suburb beyond Sidbury, at the opposite end of the city, was much smaller, perhaps a third of the size of the Tything. Adjusting for the loss of population because of the high mortality of 1637, a further 300 to 350 persons can be added for the suburbs. A total population for the city, St Michael's and the suburbs in 1642 of roughly 7,500 is obtained.

If we compare the pre-Civil War population with the total of 9,500 inhabitants established by the surveys of 1646, we can see that the main effect of four years of civil war on Worcester was an increase in its population of about 2,000, a rise of over 25 per cent on the 1642 level. How do we account for this dramatic jump at a time of demographic crisis, when many localities in England recorded a fall in population? A continuation of the rate of natural increase in the city, comparable to that registered in pre-war non-plague years, can be discounted. The mortality rate in Worcester rose as a consequence of bad wartime conditions — a combin-
ation, typical of garrison towns threatened by siege, of overcrowded housing, food and fuel shortages, polluted water supplies, and the spread of disease. It did not rise as sharply, however, as it did in other war-affected towns such as Bristol, Oxford, and — the best-known example — Colyton, Devon, in 1646. In spite of its swollen population, in no single year of the Civil War did the number of burials in Worcester reach half that registered in the plague year of 1637. Recorded baptisms and burials appear to have been roughly in balance during the war.

The increase in the size of the city's population must have another cause, which can in fact be easily deduced from Townshend and other sources. This was immigration. There had been a substantial influx of people from outside the city who sought protection within its defences during the course of the war. As the conflict reached its climax and the fortunes of the king declined, a net was drawn round the last important royalist garrison in the West Midlands which enclosed not only many of those who had been in arms, as the military survey revealed, but also civilian refugees of all kinds, from a wide area. At the surrender three lords, sixteen knights, forty-four esquires, one bishop and 'many' doctors and clergymen, as well as 'ladies not a few', were listed. It is likely that most were accompanied by their dependants. The articles of capitulation allowed three horses to each of those of the rank of esquire or above (suggesting servants); and the survey reveals the large household size of the wealthier residents in the city. In November 1645 it was reported that no less than 200 able-bodied clergymen and scholars were evading service in the garrison by claiming membership of the Cathedral Chapter. To the more prominent refugees and their families must be added the ordinary country people and those from the suburbs, often poor, who had been made homeless by wartime destruction and sought security in the city. Virtually all the houses outside the Foregate and St Martin's gate, as well as those in St Clement's, were razed in the course of the war.

In some circumstances immigration to a protected stronghold in wartime was matched — or even exceeded — by emigration, as those hostile to the prevailing party in the city, or fearing the consequences of overcrowding, or anxious to avoid the hardships of a siege, removed to other quarters. There is evidence that some fled Worcester before the siege began. Some citizens with parliamentary sympathies left early in the war, while several of the richer ratepayers, it was complained, left their families unprovided for in order to escape the burdens imposed on the citizenry. But in the case of Worcester it is clear, quite apart from the findings of the civilian survey, that in the later years of the war at least, immigration was far greater than emigration and that the authorities were grappling with all the problems caused by a temporarily swollen population inadequately and insanitarily sheltered in a diminished stock of houses. The laws and usages of war permitted the governor to take action to lessen these dangers by expelling the 'unnecessary people' or 'useless mouths', as those who would be a burden on the defences during a siege were described. On 1 January 1646, recognising the large number of refugees in the endangered city, the governor ordered the 'putting out of the straingers' residing there. The survey made three and a half months
later, however, revealed, in the number of unprovided, the failure of this policy. For as well as data on population the survey supplies information from which it is possible to calculate both the mean household size and the proportion of poor in the total population. The results are shown in Table 3.

**Table 3**  
<table>
<thead>
<tr>
<th>Ward</th>
<th>provided</th>
<th>persons per household</th>
<th>unprovided as a percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>unprovided combined</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>-</td>
<td>4.33</td>
<td>8.1</td>
</tr>
<tr>
<td>All Saints</td>
<td>6.03</td>
<td>5.14</td>
<td>14.1</td>
</tr>
<tr>
<td>St Andrew's</td>
<td>6.30</td>
<td>3.29</td>
<td>26.8</td>
</tr>
<tr>
<td>St Martin's</td>
<td>6.48</td>
<td>3.95</td>
<td>23.0</td>
</tr>
<tr>
<td>St Peter's</td>
<td>6.25</td>
<td>4.90</td>
<td>33.4</td>
</tr>
<tr>
<td>St Nicholas</td>
<td>6.28</td>
<td>-</td>
<td>55.0</td>
</tr>
<tr>
<td>Total</td>
<td>6.24</td>
<td>4.15</td>
<td>23.0</td>
</tr>
</tbody>
</table>

The contrast in mean household size between the ‘provided’ households, those wealthy enough to keep a stock of provisions, and the ‘unprovided’ or poor ones is at once apparent. The difference would have been even more marked had not the figure for the ‘unprovided’ category in All Saints ward been unusually high. The overall mean household size is also high. Indeed it is substantially higher than both the standard mean household size of 4.75 persons per household established for communities in the early modern period and the 4.4 persons per household suggested by Gregory King for cities and market towns. This probably reflects the unusual circumstances in which the list was drawn up, with the overcrowding caused by temporary immigrants from outside the city and the need to accommodate those made homeless by the destruction of the suburbs raising the size of the average household above its normal level. Significantly, the list of the inhabitants of Chester compiled for the governor in 1646 in similar circumstances also produces a comparatively high figure of 5.27 persons per household. This suggests that Worcester’s demographic structure in the Civil War was not untypical of fortified towns generally.

The index of ‘unprovided’ as a percentage of the total provides a rough guide to the spatial distribution of wealth within the city. The central areas were the wealthiest. High Ward, which consisted mainly of property adjoining to the High Street, had less than 10 per cent of its population classed as ‘unprovided & poore’. It was the most prosperous ward throughout the sixteenth and seventeenth centuries, containing the houses of many of the leading citizens and also the largest inns. All Saints was the most populous ward, with over one quarter of the total population of the six wards included in the survey. It also emerges as being relatively wealthy, again confirming the general pattern of wealth in early modern Worcester, and it had the largest mean household size. The other wards contained a greater percentage of ‘unprovided’ in their populations, suggesting the presence of much more poor housing. The figures for St
Nicholas differ from the others on two counts. It was the least populous of the six wards and it contained by far the highest proportion of poor householders. Both special features may be attributable to the wartime destruction of housing in that area of the ward which lay outside the Foregate and beyond the defensive perimeter. By 1646 the whole of this suburb had been demolished by the military authorities. This probably accounts for the fact that the ward contained over 15 per cent of the combined size of the six wards in the index based upon the Hearth Tax returns, yet only 8.2 per cent of the population recorded in the 1646 survey. It may also help to explain the unusually high proportion of poor, as at least some of the homeless from the Foregate suburb, which had been the poorest and most turbulent part of the pre-war city, must have been taken into the houses within the defences. The geography of wealth revealed in the survey therefore broadly confirms the distribution within Worcester suggested in other sources for the period and also the model of the typical early modern city.

The proportion of poor, too, is characteristic of the period, when between roughly one fifth and one third of the urban population was classified as poor. Indeed, with only 23 per cent of the inhabitants considered as poor Worcester may be regarded as having been a relatively prosperous community and we can speculate that this proportion may have been even lower in peacetime. Although not entirely dependent on textile manufacturing, Worcester's economy could not wholly escape those fluctuations in trade which affected the cloth industry. A downturn in economic activity was almost invariably followed by an increase in the number of unemployed in the city. Although the Civil War did bring a demand for cloth for the royalist armies, obtaining payment for the goods supplied was difficult, and the economic dislocation caused by military activity and the blockade maintained by both sides had a catastrophic effect on Worcester's textile trades. The proportion of poor in the city was almost certainly higher as a result of the war, both as a consequence of the dislocation of the cloth trade, the flight of at least some of the wealthier householders, and the influx of impoverished temporary immigrants from the countryside.

The survey provided one further piece of information crucial to the authorities, the quantity of provisions stored by private householders. Presumably, although it is not stated, this indicates how long provisions held by a household would provide adequate rations for its members at a normal rate of consumption. It is summarised by giving the number of households which have supplies for one month, for two months and so on up to six months. Table 4 shows the figures as given in the survey with the addition of the ward totals and the monthly totals as a percentage of the overall total.

The large total for six months suggests that that figure represents six months and longer. There is no indication of the basis on which the calculation was made, nor what quantity of provisions was deemed to represent one month's supply. The total numbers for each ward approximate to those given as 'provided' in the first part of the survey.
Table 4

<table>
<thead>
<tr>
<th>Ward</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>49</td>
<td>24</td>
<td>54</td>
<td>5</td>
<td>1</td>
<td>35</td>
<td>168</td>
</tr>
<tr>
<td>All Saints</td>
<td>92</td>
<td>84</td>
<td>52</td>
<td>16</td>
<td>7</td>
<td>34</td>
<td>285</td>
</tr>
<tr>
<td>St Andrew’s</td>
<td>103</td>
<td>30</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>166</td>
</tr>
<tr>
<td>St Martin’s</td>
<td>61</td>
<td>69</td>
<td>46</td>
<td>15</td>
<td>0</td>
<td>20</td>
<td>211</td>
</tr>
<tr>
<td>St Peter’s</td>
<td>19</td>
<td>35</td>
<td>46</td>
<td>24</td>
<td>3</td>
<td>17</td>
<td>144</td>
</tr>
<tr>
<td>St Nicholas</td>
<td>11</td>
<td>13</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>10</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>335</td>
<td>255</td>
<td>233</td>
<td>62</td>
<td>12</td>
<td>120</td>
<td>1,017</td>
</tr>
<tr>
<td>Per cent</td>
<td>32.9</td>
<td>25.1</td>
<td>22.9</td>
<td>6.1</td>
<td>1.2</td>
<td>11.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

although in no case do the figures exactly correspond. Because of the insufficient explanatory information given in this section the figures are difficult to interpret. At the top of the scale of food provision those with six or more months supplies presumably included not only those leading citizens with larger than average stocks of food, but also inns and other victualling houses as well as tradesmen such as bakers. Significantly this group was most numerous in the two wealthiest wards of High Ward and All Saints. At the other end of the scale it seems reasonably certain that almost one third of the householders who had provisions, and over a half of all householders, had no more than one month’s supply of food. This helps to explain the increasing unrest among the citizens when the siege had been under way for a few weeks and the discovery was made that there were ‘at least 1500 poor of all sorts in the city that have not bread but from hand to mouth’.

As the stocks of food dwindled and the already harsh conditions in the besieged city worsened in June and July 1646, the ‘murmuring’ of the inhabitants and the protests of the unemployed weavers reinforced the pressure on the governor and the city council to make peace.

The demographic crisis of the mid-seventeenth century has been crudely conceived, when it has been considered at all, as population decrease — the inevitable result of war, plague and economic disruption. What this study of Worcester has shown is that demographic change in the 1640s was complex, and that at least one fortified town, offering protection to refugees from the war, increased its population, until by the time of its surrender it was 25 per cent larger than in 1642. A temporary influx of migrants was not outweighed either by emigration (though some took place), or by a big increase in mortality. Worcester was not as severely affected by war-related mortality as some other communities, and its native population remained stable. If the case of Worcester is typical of at least some towns in the Civil War, then demographers will have to add the temporary displacement of population to the other factors to be considered in tracing the demographic changes of these years. In addition, this case offers an example of the use which can be made by researchers of the population material generated by the war itself, in the search for alternatives to the traditional sources which are most defective for this period.
Acknowledgements

The authors would like to thank the Social Science Research Council for a grant towards the cost of the research on which this article is based and the cartography staff of the Geography Department at King’s College for preparing the map.

NOTES

2. British Library, Harleian MS. 2135, fos. 112-35. The present authors are preparing a study of this material.
5. Other listings by wards suggest the same, Townshend, i, p. 111.
6. \[4,189 — (1,459 + 1, 030 + 599 + 248) = 853.\]
7. \[360 ÷ 4.15 = 87, \]
8. \[(189 × 6.24) — 189 = 990.\]
10. Townshend, i, pp. 112-3.
11. Royalist civilian and military personnel present in the city at its surrender are listed in Townshend, i, pp. 195-6 and Calendar of State Papers Domestic, 1645-47, p. 456.
12. Ibid. This list was apparently drawn up for the Committee for Compounding with Delinquents, and the original is among the committee’s papers, PRO, SP 23/1, p. 236.
14. Ibid., pp. 44-7; and evidence from the parish registers for All Saints, St Alban’s, St Martin’s, St Nicholas, St Swithun’s, St Michael’s and St Helen’s. and the bishop’s transcripts of the registers for St Peter’s and St Clement’s.
15. House of Lords Record Office, main papers.
16. Based upon Gregory King’s study of Lichfield at the end of the seventeenth century which had a similar demographic structure to that of Worcester fifty years earlier. For most communities a multiplier of 3.2 is appropriate; this would produce a lower estimate of 5,900 for Worcester in 1642. We are grateful to the editors of LPS for providing us with this information. For Lichfield see D. V. Glass, ‘Two papers on Gregory King’, pp. 159-220 cf D. V. Glass and D. E. C. Eversley, eds., Population in History, 1965.
19. Townshend, i, pp. 184, 193; The Weekly Account, 5-12 November 1645, B.L., E 309 (6).

42
20. Townshend, i, pp. 121.
23. R. H. Morris, The Siege of Chester, 1643-1646, 1924, p. 243; omitting the imperfect entries for the Northgate and St Bridget's wards.
29. Ibid., p. 130.
30. Ibid., pp. 128, 131, 189-90.

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LOCAL POPULATION STUDIES IN SCHOOLS

Terry Gwynne

On behalf of the editorial board Terry Gwynne has been seeking contributions from teachers who have had experience of using local population studies in the classroom. What follows is a general introduction to a series of articles, the first of which appears after this introduction.

Not very long ago a curious situation seemed to exist with regard to history teaching in general; whilst the subject in the school curriculum was felt to be badly in need of reform the shelves of bookshops were loaded with history books of all sorts, shapes and sizes. Why, it was asked, was history so attractive to the adult reading public but at the same time lacking in interest at school level? The question was answered in many different ways, but there is no need to pursue them here. It is worth noting, however, that local population studies are in a somewhat similar situation; an enormous growth area in adult education they have not made the same impact in schools. Where, we may now ask, are the future demographers being trained? Will each generation of adult students have to come to local population studies with no previous knowledge or experience of them at school level? In fact the school situation is by no means as bad as has so far been implied. There is much interesting work being undertaken; in general there is no longer a great need to preach the educational value of local population studies in the classroom. Far from being viewed suspiciously as a limited topic of study they are now seen as a means of developing a variety of work, on family life, living conditions, disease, travel, occupations, and so on. Such work can fruitfully be linked to local studies of buildings, of streets, of villages, and with the environment generally. It can be pursued in conjunction with visits to museums, or objects provided by the pupils; it can encompass a wide range of subsidiary activities such as oral recordings. Fundamentally local population studies operate either as a stimulus (when starting with demographic studies) or as illustrative material (when demography is used to give substance to abstract generalisations about, for example, overcrowding). There is much supportive material available to back up these studies: advice and help, as the editors hope to make clear, are readily given.

For the teacher seeking to win the support of his colleagues there is the fact that local population studies are underpinned by sound educational principles. They are activity-based and source-based and as such meet important criteria in current educational thinking. They are ideally suited to group work and can encompass mixed-ability groupings. Methods of presentation can include creative art work; a stimulus for some dramatic reconstruction may be provided. There is no reason why such studies should remain the province of the history teacher; a multi-disciplinary approach will bring many advantages. Local population studies will contribute to two areas of current concern. The study of language across the curriculum will be enhanced when, for example, children have to grapple
with the terminology of job descriptions. The contribution to children’s numeracy is evident; but it is much more than mere practice in addition or subtraction. Exercises commonly associated with the arithmetic lesson will be seen to have relevance in a much wider context. Children will in effect attain a familiarity and perhaps an ease with the use of figures. So, in an educational sense, local population studies offer much to the teacher whether at primary, middle or secondary level.

Their appeal is not just to somewhat abstract educational principles. Whilst a sound educational rationale is essential teachers will want to know what in particular local population studies have to offer, and how in practice they operate. Aims and objectives will here be of paramount importance; they will need to be tailored to particular circumstances, and emphasis will vary according to age and ability. Some features will be common to all such studies. A useful link between written, visual and oral work will be provided. Both functional and creative activities will be catered for. An environmental connection is established; local population studies are dynamic, helping to explain the present environment. The role of the family emerges as a significant element, establishing a sociological dimension which again is an area of current concern. Pupils will be introduced to population size and structure as important historical determinants albeit in some circumstances in a fairly elementary fashion; and furthermore once which are debated in the contemporary world with its concern with unemployment, overcrowding, inadequate resources, etc. Essentially what local population studies are offering the teacher is a human study; a study of people from all levels of society, people with whom pupils can readily identify and who can satisfy children’s curiosity about the lives of their forebears.

The organisation of group activity so that it produces systematic recording, classification and enumeration of data, orderly presentation and some attempt at interpretation will create a real-life situation, the excitement of investigation, a feeling of immediacy and relevance. But if the activity is to be the prime concern the work will need to be organised with this in mind. On the other hand some teachers will be more concerned with the content and will need to organise the work accordingly. In any circumstances it would be foolish to initiate such work without first being clear about the objectives. Care needs to be taken to determine the depth of the study, for local population studies have been used at all stages from junior schools to quite sophisticated work in sixth forms.

There will, of course, be difficulties; but they are in no way insurmountable provided they are recognised at the outset. Most fall into one of two categories. There are the administrative problems associated with ensuring sufficient time is available, that the timetable is not disrupted, that colleagues are not inconvenienced, and so on. These have to be solved within the particular circumstances of each school. The second difficulty is one of resource provision and advice on what is feasible. The editors hope that this is where LPS can make a useful contribution. We are publishing in this issue an article on using local population studies with 13-14 year-olds and further articles will follow in future issues. The editors hope that a substantial series of articles dealing with classroom practice will
develop. But we also hope that, in the best traditions of LPS, a fruitful correspondence will appear; many LPS readers will without doubt have valuable comments to make on the basis of their own experience. It is to be hoped that the essential link between school and the community will be reflected in readers' comments. Perhaps some of our adult enthusiasts for local population studies can offer an answer to the question why they have appealed so much to adult education groups. The editors see the debate as one which involves both teachers and the community. But, for the teacher, we can offer advice both on the general principles of population studies and on the availability of suitable material. LPS has regularly reminded all readers that the editorial board is always prepared to offer advice on subjects within the scope of LPS; we should be only too pleased to receive enquiries from teachers about the availability of materials, the feasibility of studies, the most appropriate methodology, etc. A really successful pooling of teaching experience, expressed in articles, correspondence and queries, would be a most valuable development.

For the moment though this remains, by a deliberate decision, an introductory statement. Too often in the past there have been attempts to deal with local population studies in schools in general terms. Here, in the first instance, the articles must speak for themselves. They are offered not as ideal methodology nor as perfect teaching practice; they are reports of what has actually been attempted in the classroom, with varying degrees of success. Eventually a schema of good practice may emerge, but this will not be achieved without the help of teachers. In a future issue a bibliography of useful books, pamphlets and articles will be appropriate but here too the editors would welcome information from teachers and readers in general about works they have personally found particularly useful. There can be no question but that this introductory article has raised issues rather than offered solutions. Many of the future articles will no doubt leave readers with many questions; but in all instances they will be based upon practical experience in the classroom. The first article by Stan Saul is firmly based in the 13-14 year-old age range, and has to take account of the need to fit the work into an existing syllabus. Here is a teacher who has found his own way to local population studies as a rewarding element within the syllabus. We wonder how many other teachers are working in isolation on various aspects of historical demography. Another article will be submitted by a primary teacher working with 10-11 year olds who as well as meeting objectives in terms of local population studies has to remain ever mindful of the basic skills of numeracy and literacy which children of this age are expected to acquire. A project devised for some pupils from a fifth-form History CSE/GCE 'O' level class will provide the basis of an article, and since this scheme may have the use of a computer there will be an important link with an article on the development of information retrieval banks using multi-source demographic data. A separate scheme by a group of teachers supported by their LEA adviser to make use of data banks of census information will develop this aspect further. These reports will come from many regions, the north east, north west, East Anglia, Cambridgeshire, etc. In all cases they are written by teachers with an active interest in local population studies in the classroom.
LOCAL POPULATION STUDIES IN SCHOOLS (I)
A CLASSROOM PROJECT IN HISTORICAL DEMOGRAPHY

S. B. Saul

Breckenbeds Junior High School, Gateshead

Having no previous experience of using historical demography in the classroom it seemed sensible to think in terms of introducing it in all third-year classes, i.e. pupils in the age range of 13-14 years in their last year at a junior high school before transfer to a 14+ high school. It was important to introduce it right across the third year because this gave all pupils experience of ‘real’ history before they moved on to the examination-orientated world of the senior high school. It was thus the last contact with history for many of these pupils; in the senior high school they could find history set against physics, absorbed into social studies, or whatever. In any event, it would be very unlikely that they would have much opportunity of engaging in some historical investigation of however modest a kind. Introducing it right across the third year also had the effect of encompassing the whole ability range (with the exception of pupils undertaking remedial work). Such work would follow on very well from study of the agricultural and industrial changes of the eighteenth and nineteenth centuries; thus a useful link would be maintained with the more traditional topics of study, an important point if the pupils were not to regard historical demography as something separate from history. For organisational reasons the work was tackled in the summer term, but this had the added advantage of leaving those who were destined to have no further contact with school history with some sense of the practical nature of historical investigation.

Having taken the decision to introduce some historical demography within the confines of the normal syllabus, perhaps the most difficult and important decision, the next step was to determine the organisational detail. The class-time available was blocked in periods of one hour and ten minutes so activity had to be planned to fit into this pattern. Since group work is an intrinsic part of such activity a ‘public-relations’ exercise with staff in adjoining rooms is essential. The pupils were to undertake the work in the classroom; accordingly it was necessary to bring the sources to them. Whether this is the ideal practice or not can be debated; most teachers will find the issue settled for them by the exigencies of the school timetable, travel difficulties, and other such problems associated with the day-to-day life of a school. That is not to say that visits do not play a valuable role; they must, however, be used to the best advantage and where it is possible to make source materials available within the
classroom this seems a sensible use of time and resources. In the event, photocopies of the original registers were obtained. Since time was of the essence and this was accepted as no more than an introduction to demography, copies were made of the years as follows: baptisms, 1799-1803; burials, 1799-1803; marriages, 1819-25. These particular years in the registers provided information such as occupations and had the added advantage of being decipherable by the pupils without too much difficulty. The use of the same years for baptisms and burials allowed the pupils to become familiar with the notion of cross-referencing, by tracing child burials. A twenty-year interval between the baptism and marriage entries offered an opportunity of tracing some individuals from one register to another.

There is no doubt that one of the major problems, and one very often overlooked by the enthusiast or dismissed by the theorist, is that of manipulating the large photocopies and the considerable amount of notepaper involved. It is essential to ensure both order and preservation; this cannot be over-emphasised and is probably the key to effective work in this area. Desks were placed in pairs to provide appropriate work surfaces. The photocopies were divided into bundles on a yearly basis and securely clipped together. Each bundle was numbered so that it was possible to keep track of what was going on and who was doing what. The danger of chaotic bundles of photocopies being left at the end of the first session must be taken into account by the busy teacher, going on to other lessons which also require much preparation. If historical demography is to find a secure place within the syllabus it must not threaten to overwhelm work of other sorts; but in order to co-exist happily it requires a great deal of basic classroom organisation. Inevitably, on some photocopies one year ended and a new one began; accordingly a note had to be added to the last sheet of a bundle. Over a period of time it should prove possible to adapt sheets in such a way as to remove this difficulty.

In addition to the photocopies of the registers, a range of resources was provided. From a teaching point of view it was important to display large posters which explained clearly what work was to be undertaken, what procedures were to be followed. Large display posters were made of the history of the parish and were supported by maps, photographs and as much illustrative material as possible. Use was made of local histories to provide background. A visit was made to the church where the original registers were viewed in situ. Every opportunity was taken of utilising the surviving elements within the local environment; the gravestones were inspected in a search for links with the register entries and rubbings made of appropriate inscriptions. The various stages of the work and the range of activities were recorded on slides which served as illustrative materials in the classroom and a record for considering improving the exercise in the future.

The study began with a talk on the history of parish registers and an indication of the sort of information to be found in them. This is where the teacher has to use his judgement as to the appropriate detail which can
be introduced, particularly when faced by mixed-ability groupings. The large display posters, or if possible overhead projector transparencies, help to reinforce the introductory remarks, and can provide additional information for those pupils able to go beyond what must necessarily be a simple outline. The pupils were allowed to choose the type of register they wished to use; all those studying one type of register can be grouped in one area of the classroom for convenience. It is sensible to take the opportunity of familiarising pupils with record-office procedure and discipline by insisting that all work is carried out in pencil, and that each sheet is handled carefully and placed face down after use to preserve the order.

Possible headings to be used during the recording of information must be discussed; it is important to allow pupils to suggest their own headings since there is much to be learned from such an experience. Some suggestions will undoubtedly be unworkable and therefore will have to be abandoned; but this all adds to the pupils' experience. When appropriate headings have been devised, they can be displayed prominently on the blackboard or by using an overhead projector. The following have proved the most useful so far:

**BAPTISMS 1801**

<table>
<thead>
<tr>
<th>Month</th>
<th>Male</th>
<th>Female</th>
<th>Illegitimate</th>
<th>Father's Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MARRIAGES 1801**

<table>
<thead>
<tr>
<th>Month</th>
<th>No. of marriages</th>
<th>Husband's parish</th>
<th>Wife's parish</th>
<th>Illiteracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BURIALS 1801**

<table>
<thead>
<tr>
<th>Month</th>
<th>Male</th>
<th>Female</th>
<th>Age at death</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The pupils were grouped in pairs, with one calling out the information for the other to record on notepaper. A more elaborate project would make it worthwhile to produce pro-formas for recording the information. This part of the work requires the teacher to circulate, checking accuracy, offering advice, resolving difficulties, and so on.

When the information has been recorded the next task is to produce bar graphs to show monthly baptisms, marriages, burials, illegitimacy, occupations; the aim being not to produce hard statistical evidence but rather to allow the pupils to appreciate the process, to practise the necessary skills and to see the relevance of such work to social history in
general. The range of tasks can be extended to fit the appropriate ability range; for example, a survey of christian names can be undertaken and a comparison with the christian names of the class be made. By cross-checking with other groups it is sometimes possible to build up a picture of a family group. The graphs are eventually displayed for the whole class to view and discuss. Creative work can be incorporated into the scheme; for example, drawings of the church are made and added to the display. The opportunities of extending the work are immense. Visits to local museums add another dimension to the life of the individuals recorded in the registers. An effective link between the statistics and the general social background is an essential objective of the whole exercise; without such a link each aspect is the poorer.

The aim of such a project as this is not a scholarly exercise; it is to allow pupils to get to grips with historical evidence, and to relate it to their study of history in general. The exercise generates enormous enthusiasm and the pupils are anxious to discover items of unusual interest, such as the fact that a widow had had her infant and two older children baptised on the very same day as her husband’s funeral. A fourteen-year-old girl wrote an account of this as if she were the widow in which she showed a considerable degree of emotional understanding. Much of the value of this sort of exercise lies in its very limited nature, that is it does not require a major syllabus reorganisation. Demography is thus incorporated within the existing syllabus-constraints. The degree of pupil-interest and the level of performance achieved make the exercise well worthwhile. If the pupils are stimulated into continuing such interests at a future date the teacher can be well satisfied.
MULTIPLYING FACTORS FOR ESTIMATING POPULATION TOTALS FROM THE HEARTH TAX

Tom Arkell

Tom Arkell is a senior lecturer in the department of Arts Education at the University of Warwick. He is currently engaged in a detailed study of the Warwickshire hearth taxes.

My current work on the Warwickshire hearth tax assessments of 1662-74 has led me to re-examine carefully the persistent problem of how to produce reliable population estimates from late seventeenth-century household totals. Although the surviving hearth tax material is patchy and complicated, LPS readers have already been advised of the high quality of the Warwickshire assessments. My own studies have convinced me that with very few exceptions, the separate tenements that were listed represented households or families, which were synonymous in the seventeenth century, and not houses. The collectors recorded, for instance, that some houses had been subdivided recently and although they did give two names for a few entries, these almost certainly represented some kind of joint household.

This conclusion accords with the views of Lydia Marshall, C. T. Smith and Margaret Spufford, among others, and also very closely with the more cautious opinions of C.A.F. Meekings, John Patten and Joan Thirsk. The fact that there is still some doubt over what a hearth-tax tenement exactly represented stems partly from some inconsistencies in their collection, especially in the larger towns like Worcester, and also from the exceptional conditions in London, with which I am not concerned. It probably also springs from Gregory King’s attempts in the 1690s to use the hearth tax totals as a source for estimating the number of houses in England and Wales. It should therefore be helpful to recall that D. V. Glass argued quite simply that King’s ‘houses’ were really households.

Multiplying Factors

King’s interest in the number of houses (or households) sprang from his desire to make reliable estimates of the total national population at the end of the seventeenth century. This usually entailed multiplying totals of ‘houses’ by overall factors ranging between 4.0 and 4.2, although for the towns alone and London in particular he suggested somewhat higher multipliers. In his various attempts to pin down this elusive multiplier, King once simply asserted that ‘the people answer to 4½ per house and 4 per family’. On another occasion he used a rather dubious sliding scale
which assumed, for instance, an average of 3.7 people for a one-hearth house and 4.8 for one with five hearths. By this method he produced an estimated total population which gave an overall ratio of 4.02 people per house, but when Meekings tested it on the Sevenoaks district of Kent, it yielded ratios of 4.3 and 4.4. This led him to comment that 'a very similar result would have been obtained by the more expeditious method of multiplying the total number of entries by 4\frac{1}{2}'. It does not appear as if King ever reached a definitive conclusion, but his final estimate of 1696, which made some allowance for underenumeration, suggested the following ratios of persons per inhabited house for England and Wales:

<table>
<thead>
<tr>
<th>Region</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>5.0</td>
</tr>
<tr>
<td>Other cities and towns</td>
<td>4.4</td>
</tr>
<tr>
<td>Villages and hamlets</td>
<td>4.04</td>
</tr>
<tr>
<td><strong>England and Wales as a whole</strong></td>
<td><strong>4.17</strong></td>
</tr>
</tbody>
</table>

King's pioneering work clearly influenced later historians, even though all did not agree on which multiplying factor to use. After quoting King's 4\frac{1}{2} per house and 4 per family, for instance, Lydia Marshall produced in 1934 estimated population totals for all the parishes of Bedfordshire in 1671, by multiplying by 4.25 all those 'inhabited houses' which were not 'definitely and unequivocally stated to be empty' in the hearth tax returns of that year. Later C. T. Smith considered that his tentative multiplier of 4.2 was too high, even though it was suggested by a comparison of the Compton census and hearth tax in Leicestershire. However, Lionel Munby accepted 4.2 as an appropriate multiplier for the Hertfordshire hearth tax figures, even though he considered that in the late sixteenth and eighteenth centuries family totals should be multiplied by 4.75 to yield reliable population totals.\(^5\)

In the very first number of LPS, R. S. Schofield recommended a somewhat higher multiplier for the hearth tax households, referring rather vaguely to 'Gregory King's figure for the average household size of 4.5'. He then added: 'In general we have found that most communities do in fact have an average household size of around 4.5. But the figure can vary enormously, especially among small settlements'. By implication at least, Meekings had given some endorsement to 4.5, but when D.E.C. Eversley used it to estimate population totals from the hearth tax returns of some north Worcester parishes, he deliberately chose 4.5 as being higher than King's recommended multiplier for rural areas, because he needed to make some allowance for the exempt households which were missing. More recently J. M. Martin also argued in fav\(\text{\textcircled{u}}}\) of multiplying by 4.5 the Warwickshire hearth tax households because, 'The traditional multiple which arose from the labours of Gregory King on hearth-tax material, was one of 4.5 persons' and the local evidence 'offers no compelling reason for departing from the traditional multiple'. However Martin indicated no particular sources to support his 'traditional multiple'.\(^6\)

Since the 1970s most demographic historians concerned with the later seventeenth century have abandoned any direct reference to the work of
Gregory King in favour of Peter Laslett’s seminal chapter on ‘Mean household size in England since the sixteenth century’. Through a serious misunderstanding of Laslett’s work, almost all have applied a multiplier of 4.75 to the hearth tax. They have included John Patten, Victor Skipp, who referred to 4.75 as ‘the currently recommended factor’ and Keith Wrightson and David Levine who used ‘the multiplier of 4.75 persons per household suggested by Peter Laslett’s researches’.

Now it is certainly true that Laslett’s study of one hundred communities between 1574 and 1821 yielded 4.75 as the overall mean household size (which Laslett called ratio 3), but for the period 1650-1749 this fell to 4.5 when the nine London parishes were omitted. Moreover, for the whole period 1574-1821 it was again reduced to 4.5 when Laslett excluded individual lodgers and separated inmate households from their hosts (Laslett’s ratio 4), which made it closer to the hearth tax households. And so, correcting for both dates and household definition, Laslett’s work seems to suggest that an overall multiplier in the region of 4.3 would be more appropriate for late seventeenth-century hearth tax households outside London.

In addition, although Laslett did admit that his ‘series as a whole seems to justify the standard of 4.75 for mean household size from the late sixteenth century,’ he also issued a very clear warning. ‘Nevertheless I hope that it will not be looked upon as a universal multiplier, that is as a figure which could be used to proceed from numbers of households to totals of population for any community or small group of communities over this period of time,’ because ‘individual settlements were evidently liable to vary quite widely one from another’. For his own hundred communities the mean household size ranged from 3.6 to 7.2. However, Laslett’s warning would have been even more clear if he had stressed that mean household size varied in time as well as place.⁸

163 English Communities 1662-1712

Further information about variations in mean household size at the time of the hearth tax can be gathered from a detailed study of a table in Laslett’s chapter together with two by Richard Wall. Excluding duplications, they contain information about 163 different communities in England from 1662 to 1712, with the great majority drawn from 1695-1705. Some of these communities were amalgamations of two or more parishes. Urban areas were also heavily over-represented in the sample.⁹

| Table 1 Urban and rural distribution of population in 163 English communities 1662-1712 |
|-----------------------------------|---------------------------------|-------------|-----------|--------|-------|---|-----|
| No. of                           | pop.          | households | MHS | median | date    | L | Source |
| communities                      |                |            |     |        |         |   | WPS   | WRT |
| London                           | 28            | 39,697     | 7,879 | 5.04   | 5.8     | 1695-6 | 9  | 16   | 3   |
| Middlesex                        | 29            | 92,100     | 20,096 | 4.58   | 4.8     | 1695-9 | 1  | 28   | —   |
| Other towns                      | 41            | 51,011     | 11,239 | 4.54   | 4.5     | 1685-98 | 9  | 29   | 3   |
| Rural areas                      | 65            | 24,721     | 5,693  | 4.34   | 4.4     | 1662-1712 | 22 | 29   | 14  |
| Total                            | 163           | 207,529    | 44,907 | 4.62   | 4.6     | 41  | 102  | 20  |

L = Laslett; WPS = Wall, ‘Printed Sources’; WRT = Wall, ‘Regional & Temporal’.  
53
Table 2  Range of mean household size of individual communities 1662-1712

<table>
<thead>
<tr>
<th>MHS</th>
<th>L</th>
<th>London &amp; M</th>
<th>Middlesex total</th>
<th>%</th>
<th>N&amp;E other towns total</th>
<th>%</th>
<th>rural areas no.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8-3.4</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>2</td>
</tr>
<tr>
<td>3.5-3.9</td>
<td>---</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>7</td>
<td>3</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>4.0-4.4</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>4.5-4.9</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>16</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>5.0-5.4</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>5.5-5.9</td>
<td>9</td>
<td>3</td>
<td>12</td>
<td>21</td>
<td>1</td>
<td>---</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>6.0-6.4</td>
<td>8</td>
<td>1</td>
<td>9</td>
<td>16</td>
<td>1</td>
<td>---</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6.5-6.9</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.0-10.1</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>1</td>
<td>---</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Total 28 29 57 21 20 41 65

L = London; M = Middlesex; N&E = Norwich and Exeter.

These tables show how much larger the mean household size was in the metropolitan region than in the rest of the country and how much wider was the range of MHS of individual parishes in and around London. For example, only 21 per cent of the London parishes and 34 per cent of the Middlesex ones had a MHS of 4.0-4.9, but in the other towns it was 54 per cent and in the rural areas 67 per cent of the communities.

With equal precision one can report that in the rural areas the range of MHS for the central two-thirds of the communities was 3.9-4.7 and for the central three-quarters 3.6-4.9. In the non-metropolitan towns the figures were 3.9-5.1 and 3.8-5.3 respectively. However, one should be cautious about drawing precise conclusions from this information because there must be considerable doubt about what the 'households' in many of these communities represented. Many probably included 'lodgers' and approximated more to houses or Laslett's ratio 3 to seventeenth-century households (or families). Indeed, for communities with a MHS of over five it seems particularly likely that the inhabitants were grouped in houses rather than households. Consequently, to equate them more closely with hearth-tax households, one should probably reduce slightly the overall MHS of these 163 communities.

Table 3  Mean house size of groups of parishes c.1700

<table>
<thead>
<tr>
<th>Area</th>
<th>London</th>
<th>Shrewsbury</th>
<th>Southampton</th>
<th>East Wiltshire</th>
<th>East Kent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>1695</td>
<td>1698</td>
<td>1695-7</td>
<td>1700-5</td>
<td>1705</td>
</tr>
<tr>
<td>No. parishes</td>
<td>7</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>No. houses</td>
<td>771</td>
<td>1112</td>
<td>435</td>
<td>292</td>
<td>455</td>
</tr>
<tr>
<td>No. persons</td>
<td>4673</td>
<td>5041</td>
<td>1745</td>
<td>1133</td>
<td>2158</td>
</tr>
<tr>
<td>Mean houseful size</td>
<td>6.1</td>
<td>4.5</td>
<td>4.0</td>
<td>3.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Av. no. attached lodgers</td>
<td>1.7</td>
<td>0.5</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Mean household size</td>
<td>4.4</td>
<td>4.0</td>
<td>3.8</td>
<td>3.8</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 3, which is drawn from Wall's detailed study of thirty-two parishes in five different areas around 1700, gives some indication of how much this reduction might be. Since the two rural groups of parishes averaged 0.1 attached lodgers per house, this is probably the approximate figure by
which the average number of people per house in rural areas should be reduced to yield mean household size. And so if the overall MHS for rural areas in Table 1 is a reliable guide to their mean houseful size (that is the average number of people per house), then their true overall mean household size (approximating fairly closely to Laslett's ratio 4) will be about 4.25. But because these figures are only approximate, it could easily be 4.3, for instance. Whatever the eventual figure, the difference between overall mean houseful and household sizes in the countryside was clearly very slight.

In the urban areas there was usually a bigger difference between the average size of houses and households. An average of 0.2 attached lodgers in Wall's five Southampton parishes and 0.5 in Shrewsbury reflects this. However, the sample is too tiny to be used as a reliable guide to the overall mean difference between house and household sizes in towns outside London. Bearing in mind that households rather than houses might have been enumerated in at least some of the forty-one urban communities, an estimate of 0.2-0.3 might not be unreasonable. If this guess is acceptable and 4.55 is regarded as the putative mean houseful size for non-metropolitan towns, then the real mean household size for towns is likely to be in the region of 4.25-4.35. This is very similar to that of the rural areas.11

Conclusions

For those who are seeking a single multiplying factor for use in connection with the hearth tax in the later seventeenth century, the discussion points towards adopting one of about 4.3 for all areas outside London.12 However, it is important to recognise that a single multiplying factor can provide only an approximate estimate of likely population totals. This becomes clear when one recalls that the mean household size in Wall's Wiltshire and Kent parishes was 3.8 and 4.6 respectively so that when the number of their households is multiplied by 4.3, one gets population estimates that are about 90 per cent correct. Similarly, two-thirds of the rural communities in Table 2 had probable mean houseful sizes within ten per cent of 4.3 (3.6 to 4.7) and three-quarters within fifteen per cent (3.6 to 4.9). Consequently population totals obtained by applying the central multiplier of 4.3 should be regarded as having around them a range of at least plus or minus ten per cent, and possibly fifteen per cent. But even this will not allow for the full range of local variations, because a few communities had an even smaller or larger mean household size.

Although the range of mean household sizes in towns appears rather wider, a similar range of ten or fifteen per cent around a central multiplier of 4.3 should give reasonable population figures for most provincial towns, provided it is applied to household totals and not houses. Such uncertainties are likely to arise more frequently in towns where the difference between the two was normally greater and so doubts about whether one set of figures represents houses or households are more serious. Consequently in urban areas in particular great care should be taken in exam-
ining the evidence on how subdivided tenements were treated in each assessment.

It should be said that the idea of a range of multiplying factors is not new. W. B. Stephens, for example, advised that for the hearth tax 'relative or actual sizes of populations may be estimated by the use of a multiplier of perhaps four to five per household (or more in towns)'.

My own conclusions, however, suggest that the multiplying range should be somewhat lower, with the currently fashionable figure of 4.75 treated as near the top end of the range rather than the norm. If this advice is followed it will yield population estimates for the later seventeenth century about ten per cent lower than those who have misunderstood Laslett's conclusions on mean household size. A parish with 122 households, like Wrightson and Levine's Terling, would therefore have a population estimate of about 525 in 1671 and not 580, although it would probably be better to suggest that it was in the range of 470-580.

In addition, when population estimates are made they should always be presented in an approximate form and not give the impression of spurious accuracy, such as, for instance, 1002 or 5397. Similarly estimates of population increase or decrease over a period of time should not be described as, say, 11 per cent or 31 per cent, but more approximately as one-tenth or one-third.

Finally, the complexities of much of this discussion have left me wondering whether there is not a danger of overemphasising the importance of totals of individual people. One can say with a much greater degree of certainty that Terling expanded from about 70 households in 1525 to 122 in 1671 than that its population rose from about 330 to 580. Since families or households were the basic unit of pre-industrial society in a way in which they are no longer, it should be a perfectly satisfactory method of recording the size and growth of communities. No one should have any difficulty in understanding the difference between villages of, say, twenty, fifty or a hundred households or of towns with three, five or seven hundred families. And since the early censuses recorded families as well as population totals, there would be little difficulty in making comparisons with the early nineteenth century.

NOTES

1. This article has been rewritten several times before emerging in this shortened form. I am particularly grateful to Dr Anne Whiteman of Lady Margaret Hall, Oxford, for her invaluable advice and encouragement at all stages of its development. I am also indebted for their very helpful comments to Mr M. W. Farr, Dr A. Gooder, Mrs E. Gooder, Dr D. M. Palliser, Dr R. S. Schofield, Mrs M. Varley, Mr R. Wall and Mrs J. Woodall.

2. Michael Martin, 'How accurate is Hearth Tax as a guide to population size', LPS 17, Autumn 1976, pp. 58-9; Warwick County Record Office QS 11 — the assessments for 1665 and 1666 are preserved in the PRO E 179/259/9-10, but photostats are available in the Warwick CRO: J.-L. Flandrin Families in Former Times, Cambridge, 1979, pp. 4-5.


8. Laslett, p. 139.


10. Wall, 'Regional & Temporal', p. 103. This table is a slightly simplified re-arrangement of Wall's Table 4.6. Since Wall's use of the word 'household' is a source for some potential confusion, his 'total households' column has been altered to 'no. houses'.

11. The variations in London and its immediate surroundings were so much greater and varied so much more between different areas that the accurate estimation of an overall mean household size for the metropolitan area requires much detailed, specialised knowledge. See, for example, P. E. Jones & A. V. Judges, 'London Population in the late Seventeenth Century', *Economic History Review*, Vol VI, 1935-6, pp. 45-63 and Glass, pp. 167-220.

12. This figure is so close to Lydia Marshall's 4.25 that, to counteract those who argue against progress in human affairs, one should perhaps point out that her multiplier was based upon one of King's suggestions for the number of people per house (not households).


THE TABULATION OF OCCUPATIONS IN THE NINETEENTH-CENTURY CENSUS, WITH SPECIAL REFERENCE TO DOMESTIC SERVANTS

Edward Higgs

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The statistical abstracts contained in the parliamentary census reports are our principal source for reconstructing the occupational structure of Victorian society. As such they have been widely used by historians, sociologists and economists, and are a vital component of all statistical models of the economy of that period. However, despite the obvious importance of the source, very little work has been done to gauge its accuracy. With notable exceptions,¹ most students of the period have been content to accept the figures contained in the census reports at face value. The present article is not an attempt to measure the overall discrepancies in the occupational totals quoted in the census reports. It can merely suggest some ways in which such discrepancies may have occurred and to encourage others to undertake the local census studies which may allow such an evaluation to be made. An example of the problems involved in the interpretation of such published occupational tables will be given with reference to the employment of domestic servants in one northern district in the period 1851 to 1871.

When examining these statistics it is important to recognise that they are several stages removed from the reality of nineteenth-century society. They represent a series of interpretations of fact made in turn by the householders who filled in the original schedules, by the enumerators who collected these and copied them into their enumeration books, and by the clerks in the central Census Office who tabulated the results. Each would have interpreted the subtle distinctions between household relationships according to their own experience and values. When evaluating the reliability of this data it will therefore be necessary to look at the process of taking the census from the differing points of view of the individuals involved. It is also necessary to examine the assumptions underlying the interpretation of these statistics by modern historians.

These strictures certainly apply when dealing with terms such as 'servant' and 'domestic employment'. 'Service' in the nineteenth century was a
legal term rather than the description of an occupation, it related to a
certain relationship between employer and employee, and could be ap-
pied equally to living-in farm labourers and to housemaids in aristocratic
households. Thus in the nineteenth-century census schedules the term
'servant' could appear in the column reserved for information on an in-
dividual's relationship to the household head, as well as in the column
giving occupations. On the other hand, 'domestic' occupations such as
that of the housekeeper might not imply any contractual or legal rela-
tionship within the household, but rather a function carried out by a member
of the family within the home. A housekeeper could merely be the keeper
of the house, in other words, a housewife. But such a function could also
be performed by a distant relative who in every social sense was regarded
as outside the family unit, and who might even be paid on a contractual
basis. Such subtle, but nevertheless important, distinctions would be dif-
cult to communicate through a census form, and were easily lost in the
process of transcription and interpretation which the compilation of the
nineteenth-century census involved. In dealing with such matters it is
necessary to distinguish between 'domestic service' as a description of a
legal and social system, and the term 'housemaid' as a description of a
person performing a set of duties in the home of their employer. In nine-
teenth-century usage however such distinctions were often blurred.

II

The taking of a Victorian census for the whole of England and Wales, and
the derivation of statistics from the results, was a considerable admin-
istrative task. After the passing of the necessary Census Act, the depart-
ment in charge of taking the census (this was the General Register Office
from 1841 onwards) established a temporary Census Office in London.
This, staffed by temporary clerks, undertook the tabulation of the informa-
tion compiled locally. Up till 1841 the census was supervised in the field
by the overseers of the parishes, but with the establishment of civil reg-
istration in 1837 the district of the local Registrar of Births and Deaths be-
came the local unit of administration. This official had to divide his district
into 'enumeration districts', and to appoint an 'enumerator' for each.

The latter, also employed on a temporary basis, distributed household
schedules to each householder, who filled them out on the night of the
census. The enumerator had to copy these into books which were then
sent to London for tabulation under various headings.²

Such an administrative system could only produce consistent statistical
results if there was a clear policy on tabulation at the centre, and if the
staff involved were properly trained and supervised. Since the Census
Office was only a temporary institution none of these conditions could be
adequately fulfilled in the nineteenth century. The Registrar General and
his predecessors appear to have been too preoccupied with the establish-
ment of the central Census Office, and its staffing, to give much time to
the serious consideration of such policy. The temporary clerks employed
were not of a high quality, and appear to have received little training in
methods of tabulation. It was admitted in 1890 that these clerks could not be adequately supervised, and this must have applied to an even greater extent to the local enumerators and to the householders who filled in the original schedules.

Given this administrative system modern researchers must be alive to the numerous difficulties in interpreting the statistics presented in the official census reports. We have no means of gauging how far Victorian householders could understand the census schedules, or how far the enumerators standardised the entries they copied into their books for dispatch to London. Nor do we know how the clerks working in the Census Office interpreted these schedules, or how they may have revised them. Such revisions certainly took place, as when double occupations were reduced to a single component for ease of tabulation. Thus in existent schedules the term ‘farmer and butcher’ is often reduced to ‘farmer’ or ‘butcher’ by the deletion of the other, complementary, occupation.

III

More work needs to be done on the relationship between the enumerators’ books and the tabulations in the published census reports, for which they formed the raw material. A limited contribution to this task has resulted from my own research into domestic servants and their employers in the Registrar General’s District of Rochdale in the period 1851 to 1871. This work was based on one-in-four random samples of households containing domestic servants in the enumerators’ books for this district in the censuses of 1851, 1861 and 1871. Table 1, a stylised example of a household schedule from the 1851 enumeration books, shows that a ‘domestic servant’ could be defined in two ways, either by occupation or by ‘Relationship to the Head of the Household’. In my own work a ‘servant-employing household’ was defined by occupation, that is, it contained an individual designated as a variation of the terms ‘servant’ and ‘maid’, or as a butler, footman, groom, coachman, gardener, governess or nurse.

<table>
<thead>
<tr>
<th>No.</th>
<th>street</th>
<th>name</th>
<th>relation to head</th>
<th>condition</th>
<th>age</th>
<th>occupation</th>
<th>birthplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>N3 Drake St</td>
<td>Wm Smith</td>
<td>head</td>
<td>M</td>
<td>28</td>
<td>cotton operative</td>
<td>Lancs., Rochd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eliz. Smith</td>
<td>wife</td>
<td>M</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jane Smith</td>
<td>daur</td>
<td>U</td>
<td>13</td>
<td>nurse</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>N5 Drake St</td>
<td>John Rogers</td>
<td>head</td>
<td>M</td>
<td>22</td>
<td>labourer</td>
<td>Yorks., Leed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ann Rogers</td>
<td>wife</td>
<td>M</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>N1 York St</td>
<td>Wm Clegg</td>
<td>head</td>
<td>M</td>
<td>38</td>
<td>cotton manufacturer</td>
<td>Lancs., Rochd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eliz. Clegg</td>
<td>wife</td>
<td>M</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fanny Jones</td>
<td>servant</td>
<td>U</td>
<td>22</td>
<td>servant</td>
<td>Wales</td>
</tr>
</tbody>
</table>

60
As can be seen from Table 2, the sample of such households from the 1851 enumerators' books produced totals of persons aged twenty and over in the various servant occupations which, in general terms, were comparable to those found in the published census report. The match was very close in the case of housekeepers. This led to the conclusion that the clerks in the Census Office merely summed the occupational entries in the schedules to arrive at the total number of domestic servants in the district.

<table>
<thead>
<tr>
<th>Servant types</th>
<th>total sample</th>
<th>true servants</th>
<th>Census total (+4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General (F)</td>
<td>217</td>
<td>158</td>
<td>244.75</td>
</tr>
<tr>
<td>Butler</td>
<td>1</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td>General (M)</td>
<td>21</td>
<td>9</td>
<td>17.75</td>
</tr>
<tr>
<td>Coachman</td>
<td>3</td>
<td>1</td>
<td>0.25</td>
</tr>
<tr>
<td>Groom</td>
<td>4</td>
<td>2</td>
<td>0.25</td>
</tr>
<tr>
<td>Gardener</td>
<td>16</td>
<td>2</td>
<td>0.00</td>
</tr>
<tr>
<td>Housekeeper</td>
<td>66</td>
<td>10</td>
<td>65.50</td>
</tr>
<tr>
<td>Cook</td>
<td>5</td>
<td>5</td>
<td>8.75</td>
</tr>
<tr>
<td>Housemaid</td>
<td>18</td>
<td>9</td>
<td>13.25</td>
</tr>
<tr>
<td>Nurse</td>
<td>9</td>
<td>6</td>
<td>5.75</td>
</tr>
<tr>
<td>Governess</td>
<td>3</td>
<td>2</td>
<td>0.00</td>
</tr>
<tr>
<td>Ladies maid</td>
<td>2</td>
<td>2</td>
<td>0.00</td>
</tr>
<tr>
<td>Laundrymaid</td>
<td>1</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td>Kitchenmaid</td>
<td>1</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td>Footman</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Companion</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>367</td>
<td>207</td>
<td>356.25</td>
</tr>
</tbody>
</table>

* PP 1852-3, LXXXVIII; pt. II. Published totals divided by four to make them compatible with one-in-four census sample.
** For the definition of this term see section III above.

However a large number of these individuals in the sample were not enumerated as servants in relationship to the heads of the households in which they lived. Out of the total sample of 367 persons in servant occupations aged twenty years or over, 160, or over 40 per cent, were not enumerated as such, the vast majority of these being related by kinship to the household head (the term 'kinship' being used here in its widest sense to indicate any relationship by marriage or birth). In Table 2 the number of persons in particular servant occupations in the sample who were also servants in relationship to the household head are given in the second column under the heading 'true servants', the remainder being either lodgers or relatives.

These figures can be interpreted in several different ways. Such servants resident with kin may have been normally employed as living-in domestics but may have been temporarily out of work. This would, however, have represented a very high level of unemployment. Conversely this might indicate a large population of day-servants, who worked in the homes of their employers by day and who returned to lodge with their relatives at
night. A third possibility is that these 'domestics' not only lodged with their kin but also worked in their homes.

The Victorian Registrars General and modern historians have often tended to assume a dichotomy between life in the home and work in the outside world. Our conception of an occupation has tended to be conditioned by our expectation that 'work' is an activity carried on outside the home which can be measured by the money equivalents of wages or profits. Thus it has often been assumed that the number of persons in servant occupations in the nineteenth-century census tabulations represented the number of men and women working for board, lodging and wages in the homes of middle-class employers with whom they had some contractual arrangement. There is some evidence however that many of the Rochdale householders who filled in their schedules on the night of the census saw 'service' as a set of functions which could be carried on within the family.

Thus, amongst the sixty-six 'housekeepers' of all ages found in the 1851 sample only ten were also servants in relationship to the head of the household in which they resided. Of the remaining fifty-six women, no fewer than twenty-three were the heads of the households in which they lived, and another fifteen were the wives of the head of the household.

Similarly out of the thirty-eight 'nurses' living with kin enumerated in the Rochdale district sample of 1851, eighteen were aged under ten and only three were not members of the nuclear family. Such children were probably part of that vast army of child-minders so familiar in nineteenth-century textile towns, where so many married women worked. Amongst the thirty-six households containing such 'nurses', 27.8 per cent contained three or more children aged under ten, compared with 16 per cent amongst a control sample of 201 randomly selected Rochdale households. Since we are dealing here with aggregate percentages drawn from samples we cannot be certain that they are a true reflection of the actual figures which would have been obtained from a study embracing all households or all servant employing households. However statistical theory allows us to estimate, at various levels of confidence, the degree to which sample proportions will deviate from the true figures in the underlying population. In this case we can be 80 per cent certain that this difference in the two proportions quoted was not caused by sampling error.

Amongst the remaining eighty-eight female 'kin servants', who were neither housekeepers, nurses, nor specifically 'working at home', some, if not all, may have been 'day-servants' or temporarily unemployed. However, certain aggregate characteristics of the households in which they lived suggest that many may have been working at home. Thus, in 1851, out of sixty-nine households containing such servants thirty-one, or 44.93 per cent, contained a head who was widowed, compared with 17.9 per cent amongst the control sample. Similarly, amongst the former group of households, 57.1 per cent contained five or more persons, compared with 46.3 per cent amongst the control sample. Many of the households containing such 'kin-servants' were headed by persons of relatively high social status. Thus 34.3 per cent of these households were either retailers or
farmers, compared with only 16.5 per cent amongst the control sample. These aggregate characteristics suggest that many of these women were probably working at home, often standing-in for absent wives, in fairly prosperous homes.

In addition, of these eighty-eight women, 43.1 per cent were not members of the nuclear family, compared with a mere 7.0 per cent amongst the 478 females in the control sample. This indicates that such 'servants' were a feature of relatively unusual extended families.

None of these individuals can automatically be said to be misenumerated. However, the position of many of them within the households of their kin, and the aggregate characteristics of such households, suggest that a significant number will have worked at home as 'home-helps'. As Professor Anderson has pointed out, in nineteenth-century Lancashire there was a heightened propensity for relatives to provide each other with support within the home, especially at times of family crisis. The extent to which widows remained at home as 'housekeepers' whilst their children were at work, or children acted as 'nurses' for the babies of the female factory hands, and the manner in which other relations acted as proxy housewives during the widowhood of the household head, all reflect the importance of this tradition of 'huddling'. The fact that such relationships could be regarded as occupations reflects the recognition of their importance by such families.

This propensity of householders to interpret occupations in ways alien to our own preconceived notions can also be found amongst census enumerators. Thus, in 1861, out of 234 households in one enumeration district in the Castleton area of Rochdale, the enumerator described forty-nine housewives as 'housekeepers' in his copy of the original schedules. Similarly, in the same census, out of the 249 households in an enumeration district in Wadsworth, the enumerator described 141 housewives in the same manner. For these officials the term 'housewife' and 'housekeeper' appear to have been synonymous.

How did the clerks in the central Census Office interpret the results of the census? The short answer is that we do not know. However, an examination of the census schedules for the Rochdale district and the census reports for the period 1851 to 1871, suggests that some attempt was made to compensate for the type of misenumeration mentioned above. The fit between the 1851 census sample and the tables in the 1851 census report had been close, but this was not the case in 1861. In that year the census sample gave a total of 628 persons (2 to allow for sample error) aged over 19 in servant occupations, whilst the census report gave a total of 1,533 for the same age group, or 383.25 when divided by four to bring the figure in line with the one-in-four census sample. The same report recorded 253 housekeepers of that age, although the census sample would have led us to expect no fewer than 968 (14). The inference to be drawn is that the clerks did not merely add together all the occupations to get the occupational totals. On the other hand they did not do so by adding up all those persons recorded as 'servant' in the column headed
‘Relationship to the Head of the Household’. An examination of all households in the 1861 Rochdale census reveals that this figure would have been only 1,321 for all servants of all ages.

An examination of the census reports for other areas over the same period suggests that similar attempts were made to rectify the ‘mis-specification’ of servant occupations. Thus, in 1851, the borough of Blackburn was recorded in the census report as having 733 persons employed as ‘housekeepers’, nearly 38 per cent of the entire servant population.17 By 1861 the number of ‘housekeepers’ recorded had fallen to fifty-one, or under 3 per cent of the servant total.18 Over the same period the number of ‘housekeepers’ in the borough of Oldham rose from 48 to 146.19 It is evident that some alterations were being made to the raw statistics contained in the census schedules, but on what system and with what consistency we cannot tell.

Even assuming that the census reports accurately reflected the number of traditionally defined living-in domestic servants, it would still be unwise to use them uncritically to reconstruct changes in local occupational structures over time. Just as the term ‘domestic servant’ might represent the work of a woman in the home of her relatives, it might also cover other types of work which are today regarded as separate occupations. Thus, during the period 1851 to 1871, between a third and a quarter of all living-in servants in Rochdale worked for retailers. Most of these servants will have worked in the shop, a supposition confirmed by other local sources. The distinction between the servant and the shop-assistant is therefore an artificial one. Those who attempt to explain the decline of domestic service in the late nineteenth century by the rise of alternative employment, especially in shops, may be mistaking the cause for the effect. The decline of the domestic may not be linked to the ‘rise’ of the shop-assistant, rather to the change of nomenclature as the home-based, family shop was replaced by the lock-up shop and the chain store. As retailing ceased to be a domestic business so workers in this section of the economy ceased to be called domestic servants.

IV

If such mis-specifications were a general feature of the nineteenth-century census it might lead us to revise our views on the economic and social role of women in Victorian England and Wales. If we assume that all the ‘servants’ who lived with relatives in Rochdale worked at home, then out of 2,065 persons described as working in servant occupations in 1851, only 1,113, or 53.9 per cent, were properly enumerated. If such a discrepancy was found over the whole country then approximately half a million women may have been wrongly enumerated in the mid-nineteenth-century census reports. This may certainly be a gross overestimation but the precise level of this discrepancy can only be gauged by detailed studies of the role of ‘kin-servants’ in industrial and agricultural communities. It is to be hoped that the present paper has raised enough
questions about the mechanics of the Victorian census to encourage others to undertake such studies.

At the heart of the matter lies the definition of an occupation and work, and the relationship between the economic world and the home. Confusion between ‘domestic’ and ‘business’ activities may have existed in the homes of retailers, farmers, and in all small businesses where the help of the servant, wife or children was indispensable. Victorian ideology attempted to keep the two spheres of home and work separate, but we must not fall into the trap of believing that all Victorians shared these beliefs, or that such a division always existed in practice.

NOTES

2. Report of the Committee appointed by the Treasury to inquire into certain Questions connected with the taking of the Census ..., Parliamentary Papers, LVIII, 1890, Minutes of Evidence, p. 1,5(a).
3. Ibid. p. viii.
4. Ibid. p. viii.
8. This is done by calculating the difference between the two percentages involved and then comparing this with the likely magnitude of the statistical error given by the following formula:

\[
\text{Sampling error} = t \text{ statistic } \sqrt{\frac{P_{1}(1-P_{1})}{n_{1}-1}} + \frac{P_{2}(1-P_{2})}{n_{2}-1}
\]

Where:

\(P_{1}\) = first sample percentage treated as a proportion of one

\(P_{2}\) = second sample percentage treated as a proportion of one

\(n_{1}\) = number of cases in population from which first proportion derived

\(n_{2}\) = number of cases in population from which second proportion derived

The \(t\) statistic is a computed value which can be reduced in size to correspond to certain confidence levels. Thus if we wish to be 95 per cent certain that the difference between two proportions is statistically significant we multiply the results of the equation to the right of the \(t\) statistic in the formula by the value of \(t\) at 95 per cent, that is 1.96. If the resulting sampling error is smaller than the difference actually observed between the sample proportions then we can be 95 per cent certain that this discrepancy was not solely due to sampling error but represents a true difference between the underlying populations. In the case quoted above the difference is not significant at 95 per cent, but by reducing the \(t\) statistic to the 80 per cent confidence level we get a positive result. In other samples from the 1861 and 1871 censuses the differences between the analogous percentages were significant at the 80 and 95 per cent levels respectively.

65
9. Difference statistically significant at the 95 per cent confidence level.
10. Difference statistically significant at the 80 per cent confidence level.
11. Difference statistically significant at the 95 per cent confidence level.
12. Difference statistically significant at the 95 per cent confidence level.
15. The sampling error being calculated by the formula:

\[ P \pm t \sqrt{\frac{P(1-P)}{n-1}} \]

Where:
- \( P \) = number of servants treated as a proportion of all servants
- \( n \) = number of cases in the population of all servants
- \( t \) = \( t \) statistic

NOTES AND QUERIES

‘CRISIS MORTALITY’ IN BUCKINGHAMSHIRE 1600-1750

John Skinner

Articles by Dr R. S. Schofield and the late Professor J. D. Chambers in which both emphasised the significance of ‘crisis mortality’ as a stabiliser of population growth in the pre-industrial period stimulated this enquiry into the effects of such crises in Buckinghamshire. Local investigation of parish registers, any available ecclesiastical, fiscal and military records such as the Protestation Returns of 1641, the Compton Census of 1676 and the Browne-Willis estimates of 1712-13 will help in the understanding of the period. The representative parishes were selected from the available registers with consideration being placed primarily on their continuity. There seemed to be an almost universal complete break during the interregnum yet those selected provide as fair and accurate a picture as can be obtained. The twenty-one parishes selected also had their registers available at the County Record Office, Aylesbury or could be easily consulted. The parishes consist of seven from the northern area with reasonable access along Watling Street, seven parishes from the southern area associated with the main London-Oxford road and the river Thames and seven parishes from the central region of the county through which ran Akeman Street. These three regions also provided differing as well as similar geographical features which became the decisive factor in their selection. The southern group contained the most fertile arable area and wooded Chiltern country, the northern section contained wooded pastoral upland and the central areas consisted of mixed-farming, part forested lands.

It is generally accepted that eighteenth-century registration for England and Wales was not as accurate or reliable for population statistics as that of the seventeenth century, when there had been several attempts at improving the system e.g. appointment of civilian registrars in 1653, the Burial in Woollen Act of 1678 and a registration Act of 1694. These actions produced a temporary increase in registration at least, which indicated more an obedience to instructions rather than an increase in the numbers of births, marriages or deaths. The 1678 Act was intended to stimulate the textile trade primarily. Nevertheless it was possible to collect annual aggregative totals of baptisms, marriages and burials so that several conclusions or interpretations concerning fluctuations and their local and regional associations could be arrived at.

Using Dr Schofield’s assumption that a figure twice the annual death rate constituted a crisis, remembering that small parishes would have a greater tendency to produce statistical irregularities and that deaths in which malnutrition played a certain role may occur many months after the agricultural crisis that caused it, I arrived at the following years in which over half the representative parishes were affected: 1625, 1681, 1727-30, 1741 and 1747. Of those years, 1729 was the most devastating numerically in that thirteen of the twenty-one parishes experienced severe crisis. This
year was also a particularly ‘sick’ year in other parts of the country as testified by other published research. In addition over one-third of these parishes were affected by some type of crisis in the years 1612, 1616-18, 1631-2, 1638-40, 1643, 1657-9, 1684, 1693, 1696, 1701, 1710-12, 1736 and 1740-3. Recurrent mortality was present on many occasions. The period generally indicated few years when there was no crisis of some kind in the county.

The frequency of high mortality in Buckinghamshire during the seventeenth century can usually be explained by plague attacks, especially during the first three decades. In the late 1630s and 1640s it was caused probably by typhus or dysentery outbreaks from troop movements during the Civil Wars. The Parliamentary period, in spite of the fact that many registers were either discontinued or badly-kept, showed a marked rise in burial entries especially in the years 1657-9, probably attributable to 'influenza-type' disease. Cromwell himself succumbed to one such attack. Plague returned with the Restoration but after the devastation of 1665-7 attacks soon ceased on a wide scale becoming more localised and restricted. Later attacks of sickness could be attributed mainly to smallpox, measles and typhus which apparently became increasingly virulent. The ‘hungry’ nineties only produced one year, 1696, when a third of the selected parishes experienced excessive mortality — ‘the poor were in sad privation’, which could be explained by the fact that Buckinghamshire had a reasonable communications system so that shortages could be relieved by bringing supplies in from neighbouring Oxfordshire, Berkshire and Hertfordshire, which had been done earlier on a smaller scale.

The years 1727-30 and 1740-3 were devastating periods of recurrent disease producing population crises in many parts of the country, which indicated an extensive problem. The least devastating of those periods 1740-3, began with a year of extraordinary scarcity, followed by two years of excellent harvest ending with a ‘year of plenty when bread [was] never so cheap as at present.” Starvation as a cause of the crisis seemed to be insignificant, although the peak year for entries 1741 was also a year in which corn malt was banned from exportation in April and corn export banned completely from August until after Christmas. In Aylesbury, a startling increase in burial entries is attributable by the parish registrar’s comments on the totals … ‘of which there died this year of the smallpox only 148.” Lack of positive medical evidence for other outbreaks, other than for smallpox, in spite of inoculation, leaves room for speculation. Burials declined from 1743 which indicated an improvement in the situation. In 1747, yet another crisis was recorded throughout the country particularly in the south, which evidently was more vulnerable to disease attacks because of the increased sources of infection provided by travellers on the routeways and traffic both commercial and private on the river Thames.

The geographical structure of the area generally shows it to be wooded and mixed-farming with the southern region dominated by the wooded uplands of the Chilterns. These factors alone would ensure the existence
of a more nomadic population as well as the likelihood that wooded areas tend to harbour infection because of increased opportunities for infection to develop and spread. This problem would be further exacerbated in a thoroughfare county like Buckinghamshire.

Some of the representative parishes were affected to a greater or lesser extent in almost every one of the major crisis years of 1625, 1681, 1727-30, 1741 and 1747. High Wycombe situated astride a major routeway and close to the river Thames avoided only the almost universal and most devastating attacks of 1727-30, while Little Marlow, only a few miles away, suffered them. The latter suffered as well in most of the other significant crises, demonstrating its vulnerability to attack from two sources; and when it was not affected its sister parish Great Marlow was, including the crisis of 1657 and 1658. There was no parish which appeared to be as vulnerable, even Stony Stratford and Wolverton, both astride an even busier routeway, experienced fewer attacks. Aylesbury suffered attack in all major crisis years except from 'December 1624 (when) began the great plague which continued till the end of December 1625, in all of which time there died not one of the town of Aylesbury' (see Figure 1). The town had experienced increased mortality because of plague in the years 1621-23 so probably a degree of immunity had been created.

![Diagram showing years affected by disease in Stony Stratford, High Wycombe, and Aylesbury](image)

**Figure 1.**

There is some evidence of population recovery shown in the baptismal entries in the years following a crisis but many registers are so erratic and unreliable that the figures in some years are completely distorted. Some parish registers show an immediate recovery whilst others showed persistent morbidity which made recovery late and persuaded the inhabitants to delay the risky business of procreation. There does seem to be a consistently higher than normal number of registered baptisms over several years rather than a massive immediate increase in numbers which would indicate a degree of circumspection, e.g. in Aylesbury baptisms registered for the years 1611, 1612, 1613, 1615, 1616, 1617, 1618 and 1619
### Table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>High Wycombe</th>
<th>Aylesbury</th>
<th>Stony Stratford</th>
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<td>1625</td>
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<td>1626</td>
<td>72</td>
<td>77</td>
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<td>1638</td>
<td>118</td>
<td>95.6</td>
<td>95</td>
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<td>1639</td>
<td>108</td>
<td>101</td>
<td>57</td>
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<tr>
<td>1640</td>
<td>112</td>
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<td>101</td>
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<td>171</td>
<td>104</td>
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<tr>
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<td>79</td>
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<td>90</td>
<td>58</td>
<td>63</td>
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<td>1684</td>
<td>92</td>
<td>68.5</td>
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<td>1694</td>
<td>78</td>
<td>61.4</td>
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<td>1696</td>
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<tr>
<td>1742</td>
<td>107</td>
<td>83</td>
<td>253</td>
</tr>
</tbody>
</table>

1. entries confused.
2. 'of which there died of the smallpox only 148.'

were respectively 49, 48, 43, 54, 38, 49 and 49 — the decadal average being 46.8 (see Table 1).

From this essentially superficial examination of the chronology, frequency and intensity of crisis at parochial levels which included generalisations with regard to the geographical structure of those parishes, some conclusions can be drawn.\(^8\) Firstly the more locally restricted the epidemic, the more severe it was, e.g. Aylesbury in 1742, Buckingham in 1709 and again in 1736. Secondly there is some evidence of the capillary effects of disease attack on a delayed scale: for example in the northern area disease struck Thorndon 1735, Buckingham 1736 and Winslow 1737; in the central area at Waddesdon 1741, Aylesbury 1742 and Berton 1743; in the southern area at Wycombe 1682, Great Marlow 1683 and Little Marlow 1684.\(^9\) There seemed to be declining influence of severe mortality resulting from military movements, famines or epidemics, probably because of the decreasing regional disparities brought about by an improved and more efficient transport system\(^10\) and helped by the will and increasing capacity of society generally to relieve famine. Administrative improvements had made doctors become more aware of possible connections between environment, economy and infectious diseases.\(^11\) In spite of strictures formulated,\(^12\) some doctors were becoming preventive and occasionally curative in their attitudes and actions. This slow improvement in attitudes, both medical and lay, towards disease, decreased its effectiveness and with other more general economic and social factors helped in the decrease of mortality fluctuation which had been such a feature of earlier centuries in western Europe.
Periods of high mortality seemed to decrease in frequency during the eighteenth century which indicated that people were probably developing an immunity to disease or that they were becoming healthier. Registration itself declined with the increasing influence of non-conformity but evidence of decreasing vulnerability is of equal significance. The early decades of the eighteenth century saw high mortality but increasingly the last decade of the seventeenth century in Buckinghamshire does not appear to follow this generalisation, even though food prices were exceptionally high, it indicates that there were other causes for declining mortality. A population attacked by hunger was less capable of bearing the ravages of disease. The harvest in abundance or dearth was vital to three-quarters of the population, because a crop failure would tend to exacerbate the normal vulnerability, which together with economic and commercial depression, often occurring simultaneously, would cause havoc among the weaker members of society.  

'The circumstances of each individual and each local community are in a sense unique ... any drastic national averaging of experience tends to hide the local realities behind the generalisation," which leads to the conclusion that in the seventeenth century at least there was no one year when one village or parish was immune from attack whereas in the succeeding century there is evidence of increasing immunity on a reasonably wide-scale, brought about by an improving quality of diet, living conditions, a changing attitude to health and its ramifications and an improvement in the transport and communications system. The annual aggregate totals of baptisms, burials and marriages provide possible explanations for the fluctuating rates including those dealing with the intensity and recurrence of the crises, the greater vulnerability of some parishes and the declining incidence of crises in general.

NOTES

4. I here wish to record my grateful thanks to E. Davis. H. Hanley and other staff for their unfailing assistance.
5. I here wish to record my grateful thanks to the incumbents of Buckingham, Winslow and Marlow for their permission to consult the register in their keeping.
   J. D. Chambers. The Vale of Trent 1670-1800, Economic History Society, Pamphlet No. 3., 1957.
10. Verney Memoirs, Vol. I p. 456, Sir Ralph Verney to Lady Warwick, 17. ix. 1657, confirmed by another letter Dr. R. Denton to Sir Ralph Verney, 28. ix. 1657 'the new disease ... an epidemic swept the Claydons.'
12. In 1631 at Desborough Hundred, *Calendar of State Papers (Domestic) Charles I* (iv) 191, 35.
19. B.R.O. PR 205/1/1, PR 29/1, PR 237/1, PR 215/1/1-2, PR 11/1/1, PR 16/1/1-2, High Wycombe Record Office SM892/22C/107D, D/A/T 126-7, PR 141/1/1.
21. cf. among medical personnel in Brittany and Anjou according to research by J. Goubert and P. Lebrun.
24. E. A. Wrigley, op. cit. p. 15.
Social History

An International Journal
Edited by Janet Blackman and Keith Nield
Department of Economic and Social History, University of Hull

'Social History has without a doubt immediately established itself as enormously superior to all English-language journals in the field, with the possible exception of Past and Present.'
The Times Educational Supplement

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Methuen & Co Ltd, 11 New Fetter Lane, London EC4P 4EE
SOME RECENT PUBLICATIONS

Michael Anderson


Anderson considers recent work on the family within four fairly distinct schools: the demographic, the sentiment, the household economic and the psycho-historical. The last is dismissed as worthless, but the other three approaches, he concludes, should be pursued, although none of them on its own is satisfactory. The sentiment school, represented by the work of Stone and Shorter, is the only one to deal with attitudes, but the attitudes recorded are often just those of the literate minority. The demographic school comes in for much criticism, particularly Peter Laslett's studies of the household, on a number of grounds: for poor quality data, the atypicality of England, the meaninglessness of averages, the difficulty over meaning (for example, the term lodger may have a different meaning in a different economic context), and the lack of any theory on the nature of the familial system. Some criticisms seem justified but to argue, as Anderson does, that the household has no meaning in itself, but is only the end product of some other element in society, such as a labour group, is problematic. Nor is it wise to consider historical data simply from the point of view of their relevance to particular theories of the development of society.

It could also be argued that much more work needs to be done on the proto-industrial household before we can assess some of the theories of the household economic school. Dividing all work on the family into 'schools' can be helpful, particularly for the student who is new to the subject, but it is likely to raise the hackles of researchers who do not see their work as falling within such a straightjacket.

Gillian N. Baker

East Anglian History and Archaeology. Work in Progress, No. 3, 1981, University of East Anglia, Centre of East Anglian Studies.

In most cases, includes a brief description of research in progress or proposed. A number of the studies to which reference is made lie in the field of historical demography.

F. W. Bentley

Oakford: the history of a Devon parish, £4.75 from the author, Northside, Crosspark Hill, Oakford, Tiverton, Devon EX16 9EW. Postfree to LPS subscribers.

A thorough local history containing much detail on the ownership of the manor from Domesday and farms from the late seventeenth century. The parish registers are also analysed in some detail applying both aggregative and reconstitution techniques. Specific tables are devoted to the frequency of surnames (in 20 year periods), Christian names (50
year periods), the number of baptisms, marriages and burials (decadal), sex ratio at baptism, marital endogamy, infant mortality, proportion of adult women dying ever married, interval between marriage and first birth (50 year periods) and mean age at first marriage (20 year periods).

Fareham Local History Group

**Fareham past and present**, Book XI, Vol II (Spring 1982), 30p from Mrs A. James, Wood End Lodge near Wickham, Fareham, Hants.

Snippets of local history including a summary of part of the 1841 census enumerators’ returns for part of Fareham.

Roger Finlay

**Parish Registers. An introduction**, Historical Geography Research Series, Number 7, February 1981. (Orders for copies must be addressed to Geo Abstracts Ltd., University of East Anglia, Norwich BR4 7TJ.)

A brief guide on how to use parish registers and how they have been used. Amongst the illustrations are a sample of a completed family reconstitution form and an aggregative analysis form, and a guide to calculating endogenous and exogenous infant mortality. There is a useful summary of recent work by Finlay himself on the demography of London in the seventeenth century and by Levine on two contrasting Leicester-shire parishes between the seventeenth and nineteenth centuries. Also included is a short account of back projection (see also Local Population Studies 21, Autumn 1978, pp. 9-10).

Roger Finlay


The research presented in the article attempts to derive life tables for sub-groups within the population of an upland rural community, Cartmel, in north west England in the seventeenth century, from an analysis of parish registers and probate records. Differences in child mortality rates between males and females were found to be relatively minor: settlement size and socio-economic factors were more important determinants of mortality experience.

Jeremy Gibson and Pamela Peskett

**Record Offices: how to find them**, 1981. Federation of Family History Societies, £1 plus 20p postage from the Federation, 96 Beaumont Street, Milehouse, Plymouth, Devon, PL2 3AQ.

A series of maps showing the location of record offices in England and Wales and the Scottish Record Office and National Library of Scotland in Edinburgh. A valuable guide that will be welcomed by all those whose greatest difficulty has been the finding of the record office on their first visit.
Jeremy Gibson and Colin Chapman

*Census Indexes and Indexing*, 1981, Federation of Family History Societies, £1 plus 20p postage from the Federation (address as above).

This pamphlet is designed for genealogists and family historians who produce both indexes to and transcriptions of the nineteenth-century census returns. A number of different indexing systems are described, yielding varying levels of detail and it is a pity that the editors did not recommend the full transcription of the enumeration schedules, more satisfactory, particularly to the social historian, but then necessarily also more time consuming.

Jeremy Gibson

*Census Returns 1841, 1851, 1861, 1871 on microfilm*, 1979, Federation of Family History Societies, 75p plus postage, from the Federation (address as above).

An indispensable list of the locally held copies of the enumerators' schedules from the mid-nineteenth century censuses.

Arthur E. Imhof


A study with contributions in English, French and German of the development of medical services and techniques and of changes in the pattern of mortality. Readers of *Local Population Studies* are likely to find most interesting Alain Bideau's conclusion that there was no difference between social classes in the level of infant mortality during the eighteenth century in the village of Thoissey in the principality of Dombes, France.

The explanation, according to Bideau, lies in the fact that rich and poor were equally at risk of catching smallpox and, by drinking the same water, were equally exposed to the danger of typhoid. At the same time it would seem that the infant mortality of the highest social group need not have been so high but for the fact that mothers in this group sent their children out to be wet-nursed.

The collection of essays as a whole lacks unity because, as Robert Lee points out, the medical system did not determine shifts in mortality even in the early nineteenth century, since these were largely influenced by economic circumstances.

Jude James

*Comyn's New Forest, 1817 Directory of Life in the parishes of Boldre and Brockenhurst*, published by C. J. Newsome and Associates in conjunction with Lymington Historical Record Society, January 1982. Copies obtainable from Jude James, Lymington Historical Record Society, 3 Sylvan Close, Hurdle, Hampshire at £17.50 plus £1.50 postage and packing.
A beautifully produced book, giving a transcript of the Reverend Henry Comyn's survey of the inhabitants of Boldre and Brockenhurst in 1817. The survey not only lists the inhabitants of the two parishes but also gives information about the location of absent members of each family, about occupations, land tenure and such matters as early marriages and maiden names. The value of the transcript is enhanced by an introduction giving the making, purpose and value of Comyn's Note Books together with an analysis of family structure, the gentry schools, occupations, religion, drawing also on parish registers, Poor Law books, the records of local courts and Land Tax returns.

The book is lavishly illustrated with maps and pictures.

Peter Kriedte, Hans Medick, Jürgen Schlumbohm

*Industrialization before Industrialization*, translated by Beate Schempp, Cambridge University Press, 1982, £7.95 (paper back, also issued in hard covers).

A series of essays by three German academics, attached to the Max-Planck-Institut für Geschichte, Göttingen, who treat, each from a different angle, the development of rural regions in which a large part of the population lived entirely or to a considerable extent from industrial mass production for inter-regional and international markets. They consider whether this development is part of the process of disintegration undergone by the feudal system dating back to the High Middle Ages and which ultimately led European agrarian societies to industrial capitalism.

Included in the book are essays by two American scholars, H. Kisch and Franklin F. Mendels; the latter coined the term 'proto-industrialization' for this period of 'industrialization before industrialization'.

P. Laxton


A detailed account of the background to the enumeration of the population of Liverpool in 1801 with analysis by district of the number of families per house, the proportion of the total housing stock consisting of cellars dwellings and the proportion of families headed by labourers.

Graham Neville

*Religion and Society in Eastbourne, 1735-1920*, published by the Eastbourne Local History Society; £1.50 plus 18p postage. Orders for 10 copies or more receive a 25% discount. Copies may be obtained from: Harold Spears, 30 East Dean Road, Eastbourne BN20 8EE.

An interesting account lightened by flashes of wit of the growth of a small Sussex village into a large Victorian seaside resort and in the twentieth century into a retreat for the retired and elderly. The diversity of society consequent on the increase in population brought with it a variety of religious affiliation in church and chapel.
Alfred Perrenoud


A major study in French of the population of Geneva. There is a detailed analysis of household structure based on censuses during the eighteenth and early nineteenth centuries. But the main part of the book is devoted to the demography of the town, and to annual and monthly fluctuations in the number of deaths, births and marriages over a very long time period extending from the sixteenth to the nineteenth century. Further chapters deal with the occupational class structure of the town and the places of origin of migrants.

This book is likely to become a reference point for future work on early modern and nineteenth century towns.

Stephen Porter


Shows for three parishes in the city of Gloucester between 1653 and 1659 the interval in days by which one quarter, one half, three quarters and nine tenths of the infants had been baptised and the distribution of baptisms by day of the week. 32 per cent of the baptisms at St Johns took place on Sundays, 28 per cent at St Mary de Crypt and 18 per cent at St Mary de Lode.

Stephen Porter


A study of the interval between date of death and date of burial of mainly wealthy Oxford residents in the mid-seventeenth century. The source is the date of death as recorded on tombstones compared with the date of burial as given in the parish register.

P. D. D. Russell, ed.

The Hearth Tax Returns for the Isle of Wight. Isle of Wight County Record Office, 1981, £6, plus £2 postage per copy.

A lavishly produced transcript of all the surviving Hearth Tax Returns, including the exemption certificates for the Isle of Wight. Gaps in the documents are indicated and footnotes draw attention to phonetic variations of certain names. The editor’s introduction sets out the background to the administration of the tax and there is a summary analysis showing, among other things, the distribution of hearths per square mile.
Rutland Record

Journal of the Rutland Record Society, No. 1, 1980, Price £1.95 plus 35p packing and postage, obtainable from: The Hon. Editor, The Rutland Record Society, Rutland County Museum, Catmos Street, Oakham, Rutland LE15 6HW.

Includes a paper by Gordon Young on illiteracy in nineteenth-century Rutland compared with similar figures for the town of Northampton and England as a whole. A more detailed analysis follows of the level of illiteracy by type of parish (number of people, whether a market town or not, presence of railway station and farming type).

Rutland Record Series, Vol. 1.

The County community under Henry VIII, price £7.95 plus 87p packing and postage, obtainable from: The Hon. Editor, The Rutland Record Society, Rutland County Museum, Catmos Street, Oakham, Rutland LE15 6HW.

A well produced transcript of the Military Survey, 1522, and the Lay Subsidy 1524-5 for the County of Rutland. The military survey contains both occupations and assessments of the value of lands and goods. The introduction by Julian Cornwall provides some background to the documents and useful comments on the accuracy both in terms of the population covered and the meaning of the occupational groups identified.

Owen Stinchcombe

Lucky to survive. A centenary history of Gotherington School, £2.75 including postage from Gotherington Primary School, Gotherington, near Cheltenham GL52 4EP.

The history is as much a history of the community as that of the school. Intelligent use is made of the school log books to reveal the uneasy relationship between the School Board and the teaching staff during the late nineteenth century. Due in part to the low priority education was accorded by parents and employers alike. There are many references to the changing curriculum including the following: '29 March 1901 ... abandoned the usual arithmetic lesson for the Upper Standards in order to give them a lecture on filling up the census form'.

Richard Wall


A discussion of the factors that either alone or in combination might produce in a given population a sex mortality differential in favour of males. Factors considered are diseases specific to females not balanced by diseases specific to males, wide differences in sex roles, culturally induced patterns of behaviour, unconscious neglect of females and, finally, conscious differentiation either in the form of reserving the best food for
males, or in the form of female infanticide. Evidence is produced for some parishes in pre-industrial England to show that female infants from large families experienced a higher mortality rate than their male siblings.

Richard Wall

'Woman alone in English society', Annales de Démographie Historique, 1981; Démographie Historique et Condition Féminine.

The paper establishes the extent to which women headed their own households in pre-industrial English society. It also examines the relative frequency with which widows as opposed to widowers lived alone or were taken into the households of their children.

More general comparisons are also drawn between pre-industrial and present day England and between the latter and a number of other European countries during the Second World War era.

Guides for Genealogists, Family and Local Historians


Record Offices: How To Find Them: Second edition, 1982, Street maps, showing record offices, car parks, railway and bus stations. English and Welsh historic counties. Compiled by Jeremy Gibson and Pamala Preskett ................. £1.20


Quarter Sessions Records for Family Historians: A select list, 1982 .................................................. £1.20


Marriage Indexes: How to Find Them; How to Use Them; How to Compile One. Third edition, 1982 ........................................ £1.20

The Census and How to Use It: by John M. Boreham, Essex S.F.H., 1982 ........................................ 70p

Prices include postage in the U.K.

From: J. S. W. Gibson, Harts Cottage, Church Hanborough, Oxford OX7 2AB. or The Federation of Family History Societies, 96 Beaumont Street, Milehouse, Plymouth, Devon PL2 3AQ.
MISCELLANY

THE INHABITANTS OF SUMMERTOWN, OXFORD, IN THE YEAR 1832

Contributed by Richard Wall

Censuses can be taken for a variety of reasons, for example, to count the population or to tax it, to ascertain the condition of the 'poor' or to measure the strength of various religions. Before the official national population counts of the nineteenth century (decennially from 1801 with the exception of 1941), many censuses were local, parish based affairs and only rarely did the enumerators leave an explicit record of their motives. The vicar of Ardleigh in Essex was an exception when he wrote in 1796, 'In consequence of the avowed intention of the French to make a descent upon the coast ... I have thought it my duty to number my parishioners, which I have done by domiciliary visitation, that in the event of an actual invasion, such a list may be useful either to assemble us in order to make a resistance or in case of dispersion to enable us, upon our return, to discover and ascertain our respective claims and settlements'.

Nevertheless the Ardleigh list is rather bare of detail: name, age, relationship to the head of the household and the latter's occupation is all that was noted, although even there details were rather more than enumerations taken in conjunction with the national censuses would provide prior to 1851. By then, however, a later generation of list makers was giving some indication of what people were like, as well as how old they were. Extracts from one of these lists, for Summertown in Oxford, are reproduced below.

This list was the work of one of the residents, J. Badcock, on behalf of the incumbent. As he makes clear, it was not intended for publication or general inspection. Perhaps for this reason he allowed himself a free hand in his comments on his neighbours and their shortcomings, as he saw them, which is what gives the list its particular charm. All the same, he begins with an apologia: 'Should any person have thought me too inquisitive in endeavouring to ascertain ages, it was merely to show the present state of poor families in particular, and the whole population as above, not from any rude improper curiosity.' Other information recorded, provided without obvious qualm, included possession of the bible, ability to read, occupation and place of work, parish of settlement and the date of the construction of houses built in recent years.

It is impossible in the space available here to do justice to the document, but those desirous of studying it can consult either the original in the Bodleian Library, Oxford (Ms Top OXON e 240), or the copy in the library of the SSRC Cambridge Group. For the record, however, only about three families of 126 lacked a bible and only seventeen persons of 352 above the age of twelve could not read. The extracts have been chosen for the light they throw on various aspects of village life and are complete in themselves although the material has been slightly rearranged and punctuation modernised to facilitate reading. They must speak for them-
selves, but in reading through them it may be useful to bear the following in mind:

1. In the first place it is interesting that Badcock refers to Summertown as a village. We would rather term it a suburb, particularly with the advantage of hindsight. It is now incorporated into inner Oxford and already in 1832 many of the family heads were working in Oxford (see family 20), influencing sometimes certain social ties, such as church attendance (see family 123). Other families, however, still had ties, of a somewhat similar nature, with more rural parishes as, for example, did family 99.

2. Secondly, in writing about his neighbours Badcock tells us as much, if not more, about his own attitudes. These were conventional for the time, at least amongst certain sections of the middle class: against beer shops and unnecessary refinements of dress, for regularity in work and what he termed 'steadiness'. He does, however, consider carefully the merits of the individual case. The bastard bearer (family 78) is treated much more gently than the married couple of family 112.

3. There is also considerable interest in the amount of information he was able to find out about his neighbours. We do not, of course, know how he collected this. Ages he clearly often guessed but other information about bibles, for example, he presumably obtained by direct enquiry. But no enquiry would yield the sort of information contained in his character assessments, reflecting public knowledge of people's activities, which would be impossible in any large anonymous community. It is significant that Badcock could still make such judgements, (apart from a few blank spots about dissenters) when there were 126 families to know, many newly arrived, and a good number working outside the immediate neighbourhood.

4. The list offers a number of important sidelights on the structure and unity of the family. Take for example the role of kin, (defined here as relatives other than spouse and unmarried offspring). It is well known that these were relatively infrequent in English households, that is, people rarely lived with kin. The list confirms this and when they were present this was often only a temporary arrangement (family 91) or with a specific purpose in mind, for example, guarding the children while the wife served in a beer shop (family 4). It was more usual to keep kin at a certain distance. Some lodged relatives in houses which they had built (families 10 and 11). There was even one widow in the workhouse who received weekly visits from her son (family 21). Nor should we undervalue contacts between neighbours, one woman even being accused of neglecting her own (nuclear) family to serve their interests (family 27).

5. In terms of church building the nineteenth century was a religious age, but church attendance was far from universal. Leaving aside the acknowledged dissenters a number of families were very irregular in their attendance at church (families 27, 119). Even more striking is the
large number of occasions on which married couples were divided on religious grounds, not so much in terms of actual religion, though there is at least one example of this (family 5 and see also family 19) but in terms of the frequency of public worship. The reasons for this are not clear. In one case it is clearly attributed to an interchange of duties between wife and female servant (family 19 where wife and servant attend on alternative days). However, since it is not invariably the wife who is the non-attender, (compare families 20 and 119) it seems reasonable to draw two conclusions: first, that church attendance was a matter of personal conviction and, secondly, that this conviction was maintained, even on the part of the wife, despite the attitude of the partner. Indeed we might go further and argue, although there is no evidence on religious convictions prior to the marriage, that there was no consistent attempt to seek out a marriage partner on the basis of shared religious convictions.

6. Finally there is the question of retirement. This raises again the question of the special nature of the Summertown community, for it is clear that the retired constituted a small but important element within it (families 91, 100). Very little is known about retirement in England for those who had no pension to fall back on when they ceased working. The poor had the straightforward choice of the workhouse or seeking the support of their relatives. But it has sometimes been assumed that the more prosperous retained their property and business rights as long as they could and kept their heirs waiting in the process. Some families, however, would seem to have succeeded in adopting an alternative strategy of retiring early (late middle age), and one is specifically said to have made land over to the elder son in return for an annuity (family 100). It has to be emphasised, however, that in both cases retirement was effected without the formation of a complex household. The retired couple did not become dependent and co-reside with their offspring as would have been the case in certain other cultures at this time, in Austria for example. On the contrary, the couple on retirement moved into Summertown quitting not only their old home but their old community. It has its parallel today in the great trek to the south-west and south coasts, different only in the physical distance covered and the fact that families now have fewer children and have them earlier in life so that they do not take their younger offspring with them into retirement as did these families coming to Summertown in 1832.

Extracts from the list of inhabitants of Summertown, Oxford, compiled during the autumn of 1832 by J. Badcock

Family no. 1

Date of house: 1822-3. Number in family: 5. 
Mrs Loder, widow. Her children by her former husband: Mary Lindsey, Martha L., John L., Ann L.
All read no doubt. Bible in family or not: Yes.
Mrs L. is a butcher and keeps Oxford market daily assisted by her son. The daughters appear industrious prudent young women. The second has been out as a teacher, and is now trying to establish a day school in the village.

Family no. 4

Number in family: 7.
Morris George, age about 26 years. Mary his wife about same. Their children: Maria born 9 August 1826, George born 28 September 1828, Elizabeth born 17 September 1830, Sarah born 11 October 1831. Martha the sister of M. about 16 years of age, was confirmed in June last. Morris keeps a beer shop which his wife chiefly attends whilst he is variously employed for others where he can get a job, at day labour. Civil people — seldom at church — their house not always the most orderly. The sister is an industrious and well disposed girl. Takes care of the children.

Family no. 5

Date of house: 1823-4. Number in family: 2.
Camprino Angelo, Elizabeth his wife.
Both can read.
Camprino is an Italian and a maker of weather glasses. He is a Roman Catholic. She is not.

Family no. 10

Date of house: 1823. Number in family: 3.
Cooke Mr and Mrs his wife. Their servant maid.
Can read: Yes of course. Bible in family or no: Yes.
A printer in Oxford. Mrs C is a daughter of Mr Ivery who is the proprietor of this and the next two houses. A respectable couple, under 30 years of age probably. Regular at church.

Family no. 11

Date of house: 1822. Number in family: 1.
Jackson Mr
Can read: Yes. Bible in family or no: He has.
An aged person — lives quite alone — is scarcely ever seen beyond his flower garden. Never at church although he repeats the service at home I hear every day throughout the week or at least part of it. He is Ivery's uncle.

Family no. 18

Number in family: 6.
Bates Thomas and Mary his wife: middle aged. Their children: David in his 9th year, Charles about 2½ years younger, Jane about 2½ years younger than C., William. Bates cannot read much, his wife a little better than he. They have a bible.
Belong to Wootton near Abingdon. Thomas is a very industrious, steady man. His wife is greatly afflicted with epileptic fits. Both attentive to church. Bate's employment is in the fields or in gardening. David their son goes to a day school in Oxford, and also to Sunday School here when he can be spared from his poor afflicted mother.

**Family no. 19**

Date of house: 1823-4. Number in family: 5. Wickens, Mr Joseph Lamb and Mrs W. his wife. Their children: Rhoda Charlotte b. 19 January 1829, Matilda Adelaide b. 7 April 1831. Jane Clay — servant maid. A band box maker. They seem to be a very quiet respectable couple. Mrs W. is frequently at Church probably she well can be, alternatively with her servant. Mr W. I rather think was brought up a Dissenter but he attends Church occasionally. The children are also brought. I consider them to be a serious well disposed couple and kind parents. Jane, the servant, is attentive at Church and her daily conduct praiseworthy.

**Family no. 20**

Date of house: 1820-1. Number in family: 5. Haines Mr Stephen and his wife — are advancing in life. Two or three grown up daughters are generally here with them. Can read: Yes. Haines has a shoe warehouse in Oxford. I know but little of him, I never saw him at Church. His wife and daughters have been some few times. Personal rather than mental adornment is I fear too much the object with the young people. I wish I may be mistaken.

**Family no. 21**

**The lodging or work-house**

Date of house: 1824. Number in family: 1. Austin, widow, born 19 April Old Style 1746. Can read: No. Bible in family or no: Yes. Belongs to St Giles in which is Summertown. Died after a few hours faintness while I have been writing this. Her son from Oxford used to come and read for her comfort the bible to her every Sunday.

**Family no. 27**

Curtis is seldom at Church and his wife not very frequently. She is kind and attentive to her neighbours in time of sickness, but pays no attention to cleanliness in her own family!

**Family no. 73**

Number in family: 1.
Lord, Jane aged years.
Read or not: Yes. Bible or not: Yes she has a bible and reads it. Her husband — a worthless fellow — an old soldier — a Pensioner. They have been long parted and the half of his pension is reserved and paid quarterly to her.
She is very deaf but often attends Church.

**Family no. 78**

Number in family: 3.
Hemings Elizabeth, about 37 years of age. A single woman. Emily — her living illegitimate child, was born 12 November 1829. (The father of this child is John Gulliver, a butcher’s man, now living at Yarnton.)
A woman named Stone is a lodger at Hemings.
Elizabeth can read well. Bible in family or not: Yes. Elizabeth has lost one leg and is now in declining health. She was a very pious young person but afterwards fell dreadfully and almost considered herself an unpardonable sinner. She had many good friends — all of whom forsook her of course. There now appear evident proofs of sincere contrition. She is also recovering some of her former kind friends and above all her former peace of mind we would charitably hope on scriptural grounds.

**Family no. 91**

Number in family: 2.
Freeman Mr William and Mrs Freeman his wife.
A daughter of Mrs F by a former husband is sometimes with them.
Read or not: Yes. Bible or not: Yes.
Freeman has I believe been a farmer and now passed the meridian altitude of his day and declining towards the evening of life he has left off business.
His wife appears to be some years younger than himself.

**Family no. 99**

Number in family: 9.
Read or not: Yes. Bible or not in family: Yes they have. Belong to Eynsham. Green is best team carter at Mr Gregory’s, a sober honest man. Has his children around him (his boys particularly) of an evening and
reads to them and instructs them. Sometimes plays on his clarionet and regularly attends Church on Sundays. His wife is also an industrious and creditable person. The females generally, however, rather too fond of dress. Harriet was confirmed in June last. James at plough for Mr Gregory and goes to Sunday school at Woolvercot. C. goes to Sunday School at Summertown. H. ploughboy at Mr Gregory's and goes to Sunday school at Woolvercot. John. Sunday school at Woolvercot. W. does not know quite all his letters.

Family no. 100

Number in family: 6.

Fulbrook, Edward and Maria his wife, passed middle age.


Read or not: Yes. Bible in family or not: They have. Belong to Woodcote. Fulbrook had some land at Woodcote or Checkendon which I believe he has made over to his eldest son securing to himself an annuity. Until lately he was a careless liver. Now both himself and his wife are enthusiastically attached to the preaching of Mr Bulted (at Oxford). The three eldest children were baptised at Checkendon Church. Louisa at Woolvercot.

Family no. 112

The tenement close adjoining the above [Simmons, Richard] I can ill describe, it is a sink of iniquity! Who, upon entering into wedlock would choose an unchaste, impure woman for a companion and bosom friend? And were I a female I should be equally scrupulous in avoiding any matrimonial connexion with, or honouring with intimate acquaintance, the man who had ever frequented a home like this. May my fair country women, so justly esteemed and distinguished for personal virtue and delicacy, properly consider and duly exercise their power in bettering the age! Female influence will never fail to effect much on the manners and morals of society by the smile of approbation and the chill of marked neglect. In proportion as their influence is exerted will virtue and purity be encouraged and exalted. and vice and licentiousness sink more and more into universal contempt and banishment. But I blush at a subject which surely ought not, even by way of caution 'to be named among Christians', and must apologise for dwelling on it. Yet, alas, how often, in one way or another, are 'the sins of the fathers visited upon their children' in temporal sufferings, even 'unto the third and fourth generation'? Our village will soon, we trust, become cleansed. Until then what can we think of the proprietors of such houses! My near neighbour Mr Trash as exerted himself long and much to rid the village of such nuisances, and has in some measure succeeded. Our excellent and respected minister (with proper exertion on our part) will now complete the work.

Family no. 119 At Hunt's farm.

Number in family: 2.

[He is about 41 he says — his appearance, however, would say older. His wife somewhat older.]
Read or not: Yes. Bible or not: Yes.
A hard working couple — have seen better days. Hollis attends Church. His wife does not. Neither had either, I believe, from their own report, been within the walls of any church for seven years before our own was built.

Family no. 123

Date of house: 1797. 4th tenement. Number in family: 4.
Cross Robert about 50 years of age, Mary his wife about 35. Their children: Elizabeth born 12 February 1823, Thomas born 12 March 1826.
All read. They have a Bible. Belong to St Giles.
Cross seldom at our Church but attends Church in Oxford, his employment making it more convenient to attend there. His wife frequents our Church and has been accustomed regularly to receive the Holy Sacrament of the Lord's Supper. Children in Sunday School.

University of Nottingham

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CORRESPONDENCE

Intervals between deaths and burials in the nineteenth century

Dear Sir,

Having completed an index of the memorial inscriptions in two of the parish churches in the Aberystwyth district and an index of the burials carried out at the older parish church at Llanbadarn Fawr, I have been in a position of being able to gather some information on the average intervals between death and burial between about 1830 and 1870. I give brief details of the results below:–

Aberystwyth town. Generally four to six days.

Neighbouring rural area. Generally five to eight days, but with some notable exceptions e.g. in 1831 (12th October) David Griffiths of Nanteos Arms, Ponterwyd, Cardiganshire remained unburied for thirty-five days, and his brother Edward who died on the 2nd February 1833 was not buried until 20th February 1833 perhaps because of inclement weather and the primitive state of the roadway down the twelve miles of steep gradients. Their father, John Griffiths aged fifty-eight died on the 10th March 1837 and was buried at the Llanbadarn parish church only five days later.

More distant areas. Generally about eight days, but it is noted that one David Griffiths who died at Llandrindod Wells (about seventy miles away) on the 9th October 1834 was buried at Llanbadarn four days later, and this was thirty years before the railway came to Aberystwyth.

Yours sincerely,
E. Alwyn Benjamin,

74 Beechwood Drive, Penarth, South Glamorgan CF6 2QZ.

The Llandyrnog Householder’s schedules for the 1851 census

Dear Sir,

With reference to Donald McCallum’s remarks on the role of the enumerator in filling in householders’ schedules in the 1871 census, some light can be thrown on the problem by a study of the returns for the registration sub-district of Llandyrnog in Denbighshire for 1851. For some reason the original householders’ schedules were preserved instead of the enumerators’ schedules, the only case, so far as we know. We give here a brief summary of the relevant results of a study which we made some time ago.¹

Firstly, none of the census forms was printed in Welsh, despite the fact that the district was very Welsh speaking at the time. Secondly, a close study of one parish (Llangynhafal) showed that forty-seven forms (41%) were completed by the enumerator, although some were signed by a member of the family, or a mark made. Thirty-four (29%) were completed by a
member of the household and twenty-two (19%) were completed by neighbours. Twelve (10%) could not be definitely ascribed. The neighbours concerned could be identified by a careful study of the handwriting, and they were an agricultural labourer, a retired seaman, a shoemaker and a small farmer. The householders or their neighbours completed the forms fully, usually giving too much detail rather than too little, and this was especially noticeable for the two best-educated men in the parish, a rector and an attorney. The section on occupations gave the most difficulty; the jobs of domestic servants and agricultural labourers were often defined more exactly than required. The enumerator had made many alterations to bring the information on the schedules into line with the standard forms, and there were further pencil annotations of the type which is found on all enumerators’ schedules, and which we presume were made in the Census Office. We can therefore deduce what the enumerator would have copied into his schedules, as well as what the householder wrote down on his original form, and this gives a unique insight into the detailed mechanics of census-taking. If these forms were typical, the process of copying the information into the enumerators’ schedules would have meant considerable filtering.

In the case of Llangynhafal, a certain amount of interesting genealogical information would have been lost, such as the exact dates of birth of all the members of one family, and the names of the houses where the members of another family were born.

We conclude that there is no reason to suppose that the accuracy of the Census depended on the proportion of the forms filled in by the enumerator, since he examined and corrected those which he did not complete himself. The main factors would have been the accuracy of the memory of the householder and the integrity of the enumerator. We have found many cases of errors and omissions from both these causes in North Wales.\textsuperscript{2}

Yours faithfully,

R. M. & G. A. Benwell.

21 Ettington Road, Coventry CV5 7LD.


Another early historical demographer?

Dear Sir,

Recent examination of John Aubrey’s MS notes of his perambulation of Surrey in 1673\textsuperscript{1} revealed that to demonstrate the improving economic condition of Farnham in the seventeenth century, he gives the annual totals of baptisms for those born in the 1560s and 1660s.

The purpose of Aubrey’s tour was to provide material for John Ogilby’s
Britannia (1675) and he was possibly influenced by his fellow member of
the Royal Society, Gregory King.

Yours faithfully,
J. Jeremy Greenwood,

Deerings Place, 50 Reigate Road, Reigate, Surrey RH2 0QN.

1. Bodleian Library, MS Aubrey 4. An edited version was published as The natural
   history and antiquities of the County of Surrey (1718).

East Kent Monsters

Dear Sir,

As a contribution to the discussion on 'monsters' and unnatural births, I
can offer the following two items from East Kent.

1. In the Herne burial register is the entry under 1565:
   'John Jarvys had two woemen children twynes baptized at home
   ioyned togetheer in the belly and havyng each the one of theyr
   armes lyinge at one of theyre owne shoulders and in all other
   p[ar]tes well p[ro]portioned children buried Augusti 29.'

There was no baptism entry to correspond with this, nor is there any
other issue of this marriage, which was Jarvys's second, beginning
1562, or of the first which lasted from 1558 to 1561.

In J. Russell Smith's Bibliotheca Cantiana (1837) there is a reference to:
'The true Description of Two Monsterous Chyldren borne at Herne,
in Kent, the 27 daie of Auguste, in the yere of our Lorde 1565, they
were both women Chyldren, and were chrystened, and lived halfe
a Daye. The one departed before the other almost an Hour.

Imprinted at London by Thomas Colwell, for Owen Rogers. N.D.'

An annotation reads 'A broadside, with a woodcut of the children united
like the Siamese Twins. A copy was in the Heber collection.'

Unfortunately, I have never been able to see a copy of this broadside,
which I understand is not in the British Library. I should welcome any
information on the existence of this.

Putting the two sources of information together, and accepting their ac-
curacy, it appears that the twins were born sometime on August 27 and
survived about twelve hours, long enough for an informal baptism, prob-
ably by the midwife — compare the 1567 entry.

'William Lawson had an infant christyaned by the woemen buried 21
eiusdem (March).'</n
The twins' survival may have lasted into the following day and burial was
a day later, on August 29. Perhaps, as at Kelsale, Suffolk in 1545 (LPS 26),
they were 'sene to many credable people' in the interim, since someone
took the opportunity to write-up and illustrate the story for the 'popular
press'.
2. A less specific, and thus tantalising story appears in the adjoining parish of Reculver in 1644-5. In the baptism register under 1644 is:

'Thomas ye sonne of Boas Cobb was baptised ye 19th daye of March.'

while ten days later, after the Lady Day change of year date to 1645 we find:

'Thomas ye prodigious sonn of Booz Cobb was buried ye 29th day of March.'

Just how Thomas qualified for the description 'prodigious' at ten days of age is not explained, but it can hardly be other than in the sense of 'abnormal' or 'monstrous'. There does not seem to be any external corroboration of the story in this case, so we are left in the dark as to the form of the abnormality.

Yours faithfully,
Harold Gough,

Beverley House, 141 Grand Drive, Herne Bay, Kent CT6 8HU.

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LOCAL RESEARCH IN PROGRESS

LPS Society Day Conference — a report

On Saturday, 15th May 1982 the LPS Society held a day conference at 32 Tavistock Square, London. The conference was arranged in conjunction with the Department of Extra-Mural Studies, University of London, who provided excellent accommodation and hospitality. There was an attendance of over thirty for a programme on London Population Studies which provided an opportunity to discuss common problems and to learn about techniques and sources.

Once again the Society must express its gratitude to Professor Wrigley who has given so much time to Society conferences over a number of years. His talk on Reflections on some recent work on London population history in the sixteenth and seventeenth centuries proved a splendid start to the day's programme. Professor Wrigley began by examining London in the context of European cities and pointed out that despite its enormous growth between 1500 and 1700 there was a tendency to neglect it in explanations of demographic growth. It could, however, offer valuable insights into the demographic mechanism of such growth, e.g. immigration was an essential element in its demographic experience. The general theme was the importance of London's growth in the dynamic of the United Kingdom and even further afield. Dr David Armstrong had introduced Professor Wrigley and under his able chairmanship Professor Wrigley responded to a number of questions. There were a considerable number of contributions from the audience which testified to the stimulating nature of Professor Wrigley's address.

Barry Stapleton introduced the second speaker, Professor Roderick Floud who spoke on Nutrition and the London poor: A quantitative analysis of the records of the Marine Society 1750-1900. This proved to be a fascinating introduction to a source which was entirely new to most members of the audience. After giving a brief account of the founding of the Marine Society and its subsequent development Professor Floud went on to look at the problem of handling the data and to summarise some of the findings. He noted how such statistical work provided an approach to the standard of living debate through the real wage, the morbidity experience and the work experience of children. For LPS Society members it was exciting to note his point that such records represented the tip of an iceberg; there were similar opportunities with army recruitment records, East India Company records, prison records and so on. Professor Floud responded to a variety of questions which dealt with the statistical problems and the nature of the source itself before the chairman closed the morning session.

After a buffet lunch there was a choice of two workshops for each conference member. This arrangement had been made to allow everyone the opportunity to attend Dr Armstrong's session on The use of a microcomputer in local population studies. This was a very popular session at which participants were able to use the Extra-Mural Department's micro-
computer. Each conference member also attended either Jeremy Bolton's session on *Aspects of London Population History* or John Lander's session on *Quakers in seventeenth-century London*. As has become the practice at such conferences these were conducted on a workshop basis which gave participants practical experience in handling various source materials.

After tea Dr Armstrong conducted a final summing up session. A number of issues arose both from the conference in particular and from local population studies in general. Beatrice Shearer agreed to coordinate a group working on aspects of London Population History and would be pleased to hear from anyone working in this area who was not able to attend the conference. A future programme was considered and it was agreed that the collaboration between the LPS Society and the London Extra-Mural Department was of great value and should be continued whenever possible.

The next LPS Society Day Conference is to be held at Birmingham on Saturday, 27th November 1982 and we look forward to welcoming as many members as possible to what has become an established and very popular venue.

**The Journal of Family History** Prize will be awarded to the author(s) of that article published in the *Journal* in the calendar years 1983 and 1984 (Volumes 8 and 9) which is deemed to make the most important contribution to the field of the history of the family and kinship. The article will be judged by a panel of distinguished social historians and scholars of the family in other disciplines. A single prize of $500 will be awarded. We would remind those interested that the *Journal of Family History* publishes essays on the history of the family and kinship in all periods and regions, and that we encourage the development of the use of new sources and methodologies, as well as the refinement of those already established. To be considered for the prize, essays must arrive at the *Journal* editorial office (268 Elm Street, Concord, MA 01742) on or before June 16, 1984. Further specifications concerning submissions are detailed in the *Journal* style sheet available on request. The winner(s) will be announced in the Winter, 1984 issue of the *Journal* and at the 1984 meeting of the Family History Network of the Social Science History Association.

**LPS Society Day Conference — a report**

On Saturday 21 November 1981 the LPS Society returned for the fifth time to Birmingham, for a day conference on *Industrial Societies*. The conference was arranged in conjunction with the University of Birmingham Extra-Mural Department and as has become usual on these occasions the accommodation and hospitality were excellent. Some thirty to forty attended the conference to hear the two speakers and to take part in the discussion.
After coffee the LPS Society Chairman, Terry Gwynne, introduced Dr Barrie Trinder from the Institute of Industrial Archaeology who spoke on Early Industrial Communities in the Severn Gorge. The talk was based on wills and inventories and Dr Trinder showed how such sources could be used to put a community under the microscope. The local activity being carried on in the area was of great interest to Society members who were no doubt encouraged to think of similar work for themselves. In introducing his sources Dr Trinder showed them to be both fascinating and informative, allowing the people behind the statistics to emerge. Excellent use was made of slides to demonstrate the relation of visual evidence to the documents. When the speaker introduced the problems raised by linguistic usage it was clear that the audience was storing up a wide variety of questions for Dr Trinder, and indeed questions on unfamiliar terms and difficult meanings as well as a wide range of other topics arising from the talk kept the session going vigorously until lunch.

After lunch Beatrice Shearer, the LPS Society Treasurer, introduced Martin Clarke who spoke on Willmott and Young Re-visited: Stability and Change in Bethnal Green 1851-1861. Attention now moved to the nineteenth century as Dr Clarke explained his approach to this subject and set the whole question of the relationship between urbanisation and industrialisation into its historiographical context. By skilful use of the mid-nineteenth-century censuses Dr Clarke had studied intensively a selected area of Bethnal Green with a view to testing some of the sociological analyses of kinship bonds carried out by earlier researchers. His findings in relation to mobility were the basis of many questions which the speaker was kind enough to deal with before tea.

After afternoon tea Barry Stapleton, the LPS Society Vice-Chairman, led a general discussion during which both speakers responded to further questions. So skilfully did Barry Stapleton handle the final session that at 5.00 p.m. the audience were still going strong and ready to continue longer. The usual fruitful exchange of information took place during this session and a number of the audience reported on projects in which they were involved. During one such report Mary Turner even found time to sing a song — or at least half of one!

The day conferences continue to provide a most suitable forum for wide ranging discussion, not only in the formal sessions but also during the breaks. Geoffrey Stevenson had provided his usual efficient service to book purchasers and had set out a very rewarding bookstall. The volume of The Population History of England 1541-1871 created particular interest and reminded members that a year ago at Birmingham Professor Wrigley had been the main speaker. We are now thinking of the next return to Birmingham in Autumn 1982. In the meantime the Spring 1982 conference is to be held in London. The committee of the Society are always anxious to receive suggestions for either a venue or a conference title, being well aware that it is only by responding to a felt need by members that a successful conference can be mounted. Anyone with an idea for a future conference should contact the secretary or any member of the committee.
Archivists, genealogists, lecturers, librarians and historical demographers came together at this conference in order to discuss the effects of the 1978 Parochial Registers and Record Measure. One area, the archdiocese of Chester, was fully explored as a case study, and the conference was aptly chaired by Mr. B. C. Redwood, County and Diocesan Archivist for Cheshire, and therefore holding a central position in its implementation.

Dr. C. D. Rogers of Manchester Polytechnic, general editor of the Lancashire Parish Register Society, presented a summary of the Measure, and highlighted the main issues arising therefrom. Its main virtue was seen as the emphasis placed on the future security of the records, whether centralised to Diocesan Record Offices or retained in parish churches. Fees for consulting registers in most DROs had been reduced because none was thenceforth payable to the incumbent, and the Measure had not fallen into the trap of waiving fees only for ‘bona fide’ scholars. Dr. Rogers asked what were the difficulties of implementation caused by factors normally hidden from the users; whether fears expressed during debates on the Measure had been ill-founded — would ‘compulsory’ centralisation drive some records underground, and would moving them in large numbers lead to damage or loss? Are lost registers being recovered? Would not security be enhanced by having all registers transcribed? He suggested, however, that the conference was the wrong forum to debate the issue of whether the Mormon church should be allowed to microfilm them all.

The Ven. H. L. Williams, Archdeacon of Chester, explained the variable reaction shown to the Measure by the parochial clergy. It followed the Glebe Measure which had already threatened their freehold; henceforth, the registers can be kept in the parish church only after considerable expenditure, and are deemed to be the property of the Parochial Church Council. A systematic survey of the parish chests in the archdiocese was progressing well, and should be complete by August, 1982. It is showing considerable variation in the conditions under which the registers are currently being kept. Far from driving records underground, the exercise was bringing them to light, and all parishes were fully cooperating. Archdeacon Williams called for flexibility in the implementation of Schedule 2 of the Measure which details the physical conditions for records to be retained in parochial custody. This was supported by a member of a PCC present, who pointed out that increased pressure will soon fall on parish churches which will have to improve their buildings.

Eileen Simpson, Senior Assistant Archivist in the County and Diocesan Record Office at Chester, gave an account of her work in this survey, confirming the variation in practice, and indicating the useful role the survey is having in conveying to the parochial clergy all the implications of the Measure. An archivist from the Lancashire Record Office reported a similar effect as a result of the corresponding exercise in the Diocese of Blackburn. Miss Simpson brought gasps from the conference when she
announced the new fees payable for searches in registers in parochial custody, and indicated that there were difficulties in their interpretation. The basic search in marriage registers before 1837, and in baptismal and burial registers, has been increased to £3.00 for the first hour and £2.00 for each subsequent hour or part thereof — and it was pointed out that neither the incumbent nor the PCC would benefit.

Dr C. B. Phillips of the University of Manchester, co-director of the Cheshire Parish Register Project, excited considerable interest in this scheme whose aim is to computerise all entries from parochial and non-parochial registers in the old county of Chester up to 31 December 1871, thus facilitating the indexing and analysis of the registers. Transcribing is being greatly helped through the use of copy supplied by the DRO and this in tum has been made more feasible by the 1978 Measure. After some years of experiment, a set of regulations now ensures that all transcribers adopt a standard procedure, and a careful system of checking, including incorporation of BT material, reduces error to a minimum. The cost of transfer to the computer itself at Liverpool University remains the outstanding problem.

Jean Ayton, City and Diocesan archivist for Manchester, gave an interesting account of mutual cooperation and cost sharing between her office, which has access to microfilming facilities, and the DRO for Chester which has the registers to be copied. This scheme is extended to any registers which include the year 1850 or earlier, and the Manchester City Library benefits by acquiring a copy of the registers so microfilmed. This development is an expansion of this library’s programme, almost thirty years old, for microfilming registers in an area within twenty-five mile’s radius of the city. The conference was later joined by David Taylor, local history librarian from Manchester, for a discussion on the merits — or otherwise — of copying registers onto microfiche instead of microfilm. Such a development was felt to have clear advantages for index-type of material but was also a greater security risk and took much longer to refile.

Guide to the Listings Collection of the SSRC Cambridge Group

The list below is a further instalment of the guide to the copies of listings held at the SSRC Cambridge Group library, where they may be consulted. The guide attempts to show roughly the kind of information which the lists contain. If an item is nearly always given — explicitly or implicitly — an ‘X’ is marked. If sometimes ‘%’ is marked, and if information rarely or never appears ‘—’ is marked. ‘Inmates’ and ‘visitors’ are not included in the lodgers column but are footnoted; and ‘kin’ column includes all kin except sons, daughters or spouses.

Further details of the kind of information usually given in listings and why they were drawn up may be found in Local Population Studies Nos. 24-6. Information on any listings not mentioned in the guide would be gratefully received by the SSRC Cambridge Group for the History of Population and Social Structure, 27, Trumpington Street, Cambridge, CB2 1QA, telephone: Cambridge 354298.
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<th>Household Size</th>
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| LINCOLNSHIRE                      |       |                |      |     |          |     |          |         |                  |                   |                     |
| Driby                             | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
| Friskney                          | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
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|                                  |       |                |      |     |          |     |          |         |                  |                   |                     |
| Ingoldmells in Adlethorpe         | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  |       |                |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  |       |                |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  |       |                |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  |       |                |      |     |          |     |          |         |                  |                   | Poll tax Return     |
| Leverton                          | 1762  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  |       |                |      |     |          |     |          |         |                  |                   | Visitation List     |
| Orby                              | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
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|                                  | 1693  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
| Sutterby                          | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
| Wainfleet                         | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
|                                  | 1692  | X              |      |     |          |     |          |         |                  |                   | Poll tax Return     |
NOTES

KENT (continued)
1. Spouses only.

LANCASTER
2. Part only; families in each house separately; groups occupations into agricultural, trade and other.
3. Notes suspected recusants; sojourners and tablers.

LEICESTERSHIRE
4. Children — away and at home; miscellaneous information on families.
5. Not clear.

LINCOLNSHIRE
6. Apprentices listed.

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