CAMBRIDGE GEOGRAPHICAL STUDIES

Cambridge Geographical Studies is a series of monographs which presents new techniques of geographical analysis, publishes the results of new research work in all branches of the subject, and explores topics which unite disciplines that were formerly separate. In this way it helps to redefine the extent and concerns of geography. The series is of interdisciplinary interest to a wide range of natural and social scientists, as well as to planners.

1 Urban Analysis: A Study of City Structure with Special Reference to Sunderland, B. T. Robson
2 The Urban Mosaic: Towards a Theory of Residential Differentiation, D. W. G. Timms
3 Hillslope Form and Process, M. A. Carson and M. J. Kirkby
4 Freight Flows and Spatial Aspects of the British Economy, Michael Chisholm and Patrick O’Sullivan
5 The Agricultural Systems of the World: An Evolutionary Approach, D. B. Grigg
7 Housing and the Spatial Structure of the City: Residential Mobility and the Housing Market in an English City since the Industrial Revolution, R. M. Pritchard
8 Models of Spatial Processes. An Approach to the Study of Point, Line and Area Patterns, Arthur Getis and Barry Boots
9 Tropical Soils and Soil Survey, Anthony Young
10 Water Management in England and Wales, Elizabeth Porter
11 Geographical Change and Industrial Revolution: Coalmining in South West Lancashire, 1590–1799, John Langton
12 Population and Metropolis: The Demography of London 1580–1650, Roger Finlay
14 Spatial Diffusion: An Historical Geography of Epidemics in an Island Community, A. D. Cliff, P. Haggett, J. K. Ord and G. R. Versey
15 Empiricism and Geographical Thought: From Francis Bacon to Alexander von Humboldt, Margarita Bowen
POPULATION AND METROPOLIS

The Demography of London 1580–1650

ROGER FINLAY

Assistant Librarian
The John Rylands University Library of Manchester
CONTENTS

List of tables .................................................. vi
List of figures .................................................. ix
Preface .......................................................... xi

1 Introduction: The magnet of the metropolis ......... 1
2 The accuracy of the London parish registers ......... 20
3 The general growth of population in London ......... 51
4 London social structure in 1638 ......................... 70
5 The measurement of mortality rates .................... 83
6 The effect of plague on mortality experience ......... 111
7 Marriage and fertility ......................................... 133
8 Population and metropolis ................................. 151

Appendix 1 The London bills of mortality ............... 155
Appendix 2 Baptisms and burials in sample London parishes ..... 158
Appendix 3 Details from the 1638 listing and administrative divisions of London ..... 168
Appendix 4 London population in 1631 and houses in 1638 by wards 173

References ....................................................... 175
Index ............................................................ 185
### TABLES

1.1 Estimates of the population of England by urban and rural residence, 1600–1700

2.1 Interval in days (± 0.5) by which the stated percentile of 80 sample births had been baptized before 1653

2.2 Distribution of infant deaths within the first year of life

2.3 Endogenous and exogenous components of infant mortality rates before 1653 (1,000q₀)

2.4 Revised endogenous and exogenous components of infant mortality rates before 1653 (1,000q₀)

2.5 Underbaptism rates before 1653 (per 1,000 live births)

2.6 Glass’s estimates of underbaptism rates in the 1690s (per 1,000 live births)

2.7 Interval in days (± 0.5) by which the stated percentile of 80 sample births had been baptized in the 1690s and 1700s

2.8 Endogenous and exogenous components of infant mortality rates in the 1690s (1,000q₀)

2.9 Underbaptism rates in the 1690s (per 1,000 live births)

2.10 Stillbirth rates before 1653 (per 1,000 live births)

2.11 St Peter Cornhill, 30 November 1574 to 1 April 1605: distribution of birth–baptism intervals by age at death

2.12 St Peter Cornhill, 1574 to 1605: annual totals of dummy births and stillbirths

2.13 Interval in days (± 0.5) by which the stated percentile of sample births in St Peter Cornhill, London, had been baptized, and the percentage of all baptisms which took place on Sunday

2.14 St Botolph Bishopsgate, 25 March 1600 to 24 March 1604: day of the week of baptism and frequency of early burial

2.15 St Vedast Foster Lane, 26 January 1647 to 23 August 1653, and St Thomas the Apostle, 22 March 1645 to 23 August 1653: distribution of birth–baptism intervals by length of interval

2.16 St Vedast Foster Lane and St Thomas the Apostle: infant mortality data

2.17 The persistence of householders in St Christopher le Stocks

2.18 The persistence of householders in St Bartholomew by the Exchange

2.19 The persistence of householders in St. Margaret Lothbury

2.20 Endogenous and exogenous components of family reconstitution infant mortality rates excluding deaths in plague periods (1,000q₀)

2.21 Comparison between infant mortality rates calculated from family reconstitution and simple nominative methods

3.1 Estimates of the population of London, 1500–1800
3.2 Comparison of burials in the bills of mortality and the parish registers 54
3.3 Summary demographic measures for London parishes, 1580–1650 59
3.4 Estimates of the population of London, 1580–1650 (thousands) 60
3.5 Regional origins of migrants to London 64
3.6 Regional origins of London apprentices per 10,000 population in 1630 and 1660 65
3.7 Estimates of the proportion of apprentices in the population of London, 1600 and 1700 67
3.8 The size of the London alien community 68
4.1 Comparison between numbers of householders recorded in the 1638 survey and in other parochial list 75
4.2 Cross-matching names in the 1638 assessment and heads of families on family reconstitution forms 76
4.3 Distribution of householders by value, 1638 80
4.4 Proportions of householders by value in each quartile, 1638 81
5.1 Child life tables for the sexes combined 85
5.2 Expectations of life at birth and mortality levels in Princeton model life tables 87
5.3 Representativeness of the child life tables 89
5.4 Child life tables by sex 90
5.5 Comparative English life tables 92
5.6 Comparative French life tables 93
5.7 Comparative life tables for seventeenth-century Geneva 94
5.8 Mean birth intervals of birth parities 1–6 (in months) 94
5.9 Fate of the older child at the baptism of his younger brother or sister for the sexes combined 96
5.10 Calculation of deaths from burials 97
5.11 Proportion of nurse-children dying at particular ages in France 98
5.12 Revised child life tables 102
5.13 Infant mortality data for the poorer parishes 104
5.14 Child mortality rates 105
5.15 Summary life tables 107
5.16 Expectation of life at birth in seventeenth-century London and Geneva 108
6.1 Death rates in model populations under various mortality assumptions 113
6.2 Deaths from specific causes per 1,000 deaths from all causes 114
6.3 Estimation of percentage mortality due to plague, 1580–1650 117
6.4 Estimated London death rates in plague years 118
6.5 Crisis mortality ratios in each plague year by parish 120
6.6 Crisis mortality ratios in plague years for peripheral and suburban parishes 121
6.7 Crisis mortality ratios by age-group 123
6.8 Distribution of discrepancies between recorded ages at burial in registers and calculated ages by date of baptism up to nine years 125
6.9 Age-reporting index scores 125
6.10 Excess mortality by age: St Peter Cornhill, 1593 126
6.11 Excess mortality by age: St Peter Cornhill, 1603 128
6.12 Excess mortality by age: Allhallows London Wall, 1593 128
6.13 Excess mortality by age: St Botolph Bishopsgate, 1603 128

vi
### Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.14</td>
<td>Comparative excess crisis mortality</td>
<td>129</td>
</tr>
<tr>
<td>6.15</td>
<td>Sex ratios at death in plague periods (males per 100 females)</td>
<td>131</td>
</tr>
<tr>
<td>7.1</td>
<td>Mean birth intervals by birth order of children (months)</td>
<td>135</td>
</tr>
<tr>
<td>7.2</td>
<td>Mean birth intervals in pre-industrial England (months)</td>
<td>136</td>
</tr>
<tr>
<td>7.3</td>
<td>Age at first marriage for women</td>
<td>137</td>
</tr>
<tr>
<td>7.4</td>
<td>Residence of partners at marriage</td>
<td>138</td>
</tr>
<tr>
<td>7.5</td>
<td>Geographical residence of marriage partners where one partner was</td>
<td></td>
</tr>
<tr>
<td></td>
<td>resident in the parish where the marriage was celebrated</td>
<td></td>
</tr>
<tr>
<td>7.6</td>
<td>Age of women at death ever married by age-group</td>
<td>139</td>
</tr>
<tr>
<td>7.7</td>
<td>Sex ratio at burial before 1650 (males per 100 females)</td>
<td>140</td>
</tr>
<tr>
<td>7.8</td>
<td>Sex ratio at burial, 1664–1749 (males per 100 females)</td>
<td>142</td>
</tr>
<tr>
<td>7.9</td>
<td>Mean birth intervals in eighteenth-century France (months)</td>
<td>145</td>
</tr>
<tr>
<td>7.10</td>
<td>Mean birth intervals after an infant death (months)</td>
<td>145</td>
</tr>
<tr>
<td>7.11</td>
<td>Percentage of nurse-children in burial registers</td>
<td>148</td>
</tr>
<tr>
<td>7.12</td>
<td>Illegitimacy ratios (percentage of all births)</td>
<td>149</td>
</tr>
<tr>
<td>7.13</td>
<td>Bridal pregnancy (percentage of all marriages with children)</td>
<td>150</td>
</tr>
<tr>
<td>A1.1</td>
<td>The city and Liberties</td>
<td>155</td>
</tr>
<tr>
<td>A1.2</td>
<td>The city, Liberties and out-parishes</td>
<td>156</td>
</tr>
<tr>
<td>A1.3</td>
<td>The distant parishes</td>
<td>157</td>
</tr>
<tr>
<td>A3.1</td>
<td>Details from the 1638 listing</td>
<td>168</td>
</tr>
<tr>
<td>A4.1</td>
<td>London population in 1631 and houses in 1638 by wards</td>
<td>173</td>
</tr>
</tbody>
</table>
FIGURES

2.1 Biometric analysis of infant mortality ............................... page 26
2.2 Biometric analysis of infant mortality if births are under-registered ... 27
2.3 Revised cumulative infant mortality rates before 1653 .............. 32
2.4 Cumulative infant mortality rates in the 1690s ...................... 36
2.5 Cumulative infant mortality rates in St Peter Cornhill, 30 November 1574 to 1 April 1605 ... 38
2.6 Cumulative family reconstitution infant mortality rates ............. 49
3.1 London christenings from the parish register sample and the bills of mortality .................. 53
3.2 London burials from the parish register sample and the bills of mortality .................. 55
3.3 Five-year moving averages of London christenings from the parish register sample (1616–20 average = 100) .................. 57
3.4 The topographical growth of London during the seventeenth century .............. 58
3.5 Baptisms, burials and marriages in London parish register sample .......... 61
3.6 Burials in administrative areas of London from the bills of mortality .................. 62
4.1 Proportion of substantial households in 1638 ...................... 78
5.1 Survivorship curves .................................................. 101
7.1 The distribution of birth intervals for all births between the first and the sixth for the wealthier parishes (St Peter Cornhill and St Michael Cornhill) and the poorer parishes (St Mary Somerset and St Botolph Bishopsgate) .................. 143
7.2 Parishes accepting London nurse-children ...................... 147
A2.1 Baptisms and burials in Allhallows Bread Street .......... 158
A2.2 Baptisms and burials in St Peter Cornhill ...................... 159
A2.3 Baptisms and burials in St Christopher le Stocks .............. 160
A2.4 Baptisms and burials in St Michael Cornhill ...................... 161
A2.5 Baptisms and burials in St Vedast Foster Lane .............. 162
A2.6 Baptisms and burials in St Helen Bishopsgate .............. 163
A2.7 Baptisms and burials in St Thomas the Apostle .............. 164
A2.8 Baptisms and burials in St Lawrence Jewry ...................... 165
A2.9 Baptisms and burials in St Mary Somerset .............. 166
A2.10 Baptisms and burials in Allhallows London Wall .............. 167
A3.1 London parish boundaries ...................................... 169
PREFACE

This is the first study of the population of London during the early modern period and it is also the first detailed book in English about the population of a European metropolitan city at this time. Villages have attracted a good deal of attention from historical demographers but very little is known about larger towns and cities. By the second half of the sixteenth century, London was firmly established as a metropolitan city. Reliable population estimates can first be made from around 1600, when the city numbered about 200,000 inhabitants, a figure which doubled during the first half of the seventeenth century. Because it contained more than 5 per cent of the population of England and was about twenty times the size of the largest provincial cities, London’s importance is a recurring theme in the development of English society and economy. It is therefore difficult to study population trends in England without reference to the experience of London.

The analysis in this book is mainly concerned with the internal demography of London. It depends on the application of new techniques in historical demography, principally aggregative analysis and family reconstruction of parish registers, to the study of London population. It has always been thought the London parish registers are insufficiently reliable for this process because of the transient nature of London society and the ineffective compilation of parish registers in a metropolitan city. A good deal of the argument is therefore devoted to showing that claims such as these have been exaggerated, and that the London parish registers are worthy of serious study. The substantive results are concerned with establishing levels of fertility and mortality and with estimating the effect of the plague crises in sample parishes. These have been chosen from contrasting social areas to provide detailed estimates of demographic trends in London as a whole and to examine contrasts in population experience within the urban area. The results show that with high fertility, and very high mortality, population trends in a metropolitan city diverged sharply from the remainder of the country. There were also striking variations in demographic rates within the city.

Because of its size and the complexities of its social structure, a full study of the population of London cannot be undertaken within the compass of this book. It is hoped that this interpretation will point to some of the
Preface

directions future research may take. Earlier versions of some of the arguments have been presented to seminars in the Universities of Cambridge, Lancaster, London and elsewhere, and have also appeared in journal articles listed in the references. I am grateful to the American National Council on Family Relations for permission to use copyright material here. Of course, I am fully responsible for the errors that remain.

Much of the research for this book was undertaken whilst I was a member of Peterhouse, Cambridge, and a preliminary version was awarded a Ph.D. by the University of Cambridge in 1977. I am very pleased to acknowledge the help of the SSRC Cambridge Group for the History of Population and Social Structure, especially from Mr P. Laslett and Dr R. S. Schofield. Dr Vivien Elliott, now of the University of Adelaide, South Australia, generously allowed me to use her unpublished thesis. I should particularly like to thank Professor E. A. Wrigley for excellent advice and encouragement at all stages of my research and for his continued interest over a number of years. Professor Emrys Jones of the London School of Economics was kind enough to send me the typescript of his article on the 1638 listing when it emerged that we were both working on the same material. My task in completing the typescript has been facilitated by several colleagues in the University of Lancaster. The Cambridge University Press has done much to improve the text. Most of all, I am very grateful to my parents for their support.

University of Lancaster
September 1980