CHAPTER 1

INTRODUCTION: THE MAGNET OF THE METROPOLIS

The population history of London was the subject of the first major demographic treatise in English, John Graunt’s *Natural and political observations and conclusions made upon the bills of mortality*, first published in 1662. Thus the London statistics have always been closely connected with the origins of historical demography in England. The bills of mortality consist of aggregate totals of baptisms and burials for the whole of London, compiled weekly from the individual Anglican parish registers by the Company of Parish Clerks to advise the city authorities of the onset of plague epidemics. The main series which now survives is of annual totals and these were used by Graunt. He explained that the object of his enquiry was:

to look out all the bills I could, . . . the which, when I had reduced into tables . . . so as to have a view of the whole together, in order to the more ready comparing of one year, season, parish, or other division of the city, with another, in respect of all the burials, and christenings, and of all the diseases, and casualties happening in each of them respectively.¹

Graunt was a relatively ordinary London tradesman, and he tried in his book to convey his understanding of what was happening in his native city during the first half of the seventeenth century. The book was published only three years before the last plague epidemic, and so it appeared at the end of the period for which its conclusions were valid. However, it marked a new departure from the earlier commentators on London society such as John Stow and Thomas Dekker in that it was the first attempt at a statistical treatment of the subject; indeed, it was the first analysis of a statistical source. It was thus a pioneering book in the history of statistics, and influenced most of the classical demographers before the mid nineteenth century. The sources and methods of analysis adopted by Graunt formed the basis for many later advances in demography, in particular by Petty, King, Short and other leaders in political arithmetic.²

1. Graunt 1662: 2. Except where stated, all references to this work are to the facsimile of the first edition reprinted by Laslett 1973. The spelling and punctuation have been modernized in all the quotations.
2. Graunt’s influence in early demography is discussed in Westergaard 1932: 25–43; Kuczynski 1938; Glass 1956; Glass 1973; and Cullen 1975: 1–8. It is interesting how the titles of books by the early demographers, and the subjects they considered, retain some similarity to Graunt’s work. These include Petty, King, Short and Heberden as well as several contributors to the eighteenth-century population controversy.

1
Introduction: The magnet of the metropolis

Later writers on London population during the early modern period have used the bills of mortality; some of them have also used the work of their predecessors and reached many of the same conclusions. It is therefore sensible to begin a study of the population of late Tudor and early Stuart London with a consideration of Graunt’s interpretation.

Compared with other scientific pioneers of the seventeenth century, very little is known of Graunt’s life. Unlike many of the early Fellows of the Royal Society, Graunt was a Londoner and a working tradesman rather than a member of the ‘Oxford Circle’ or the ‘Invisible College’. All Graunt shared with scientists such as Harvey and Wilkins was a commitment to the puritan cause and a desire to apply scientific methods to the study of human phenomena, but to social data rather than to medical research. In many ways, his life was very similar to that of the Londoners about whom he wrote. He was baptized on 24 April 1620 in the Parish of St Michael Cornhill, and apprenticed to his father Henry Graunt, described as a haberdasher of small wares. He was later admitted to the freedom of the Drapers’ Company by patrimony. He must have become an important tradesman, for by 1671 he had risen to become Warden of the Drapers’ Company. He also held office in local government, becoming a member of the Common Council of the City. During the Civil War, he was a leading puritan, and a captain in the militia. Graunt was married by licence in 1641, at the age of twenty, in the church of St Martin Ludgate, to Mary Stott, then aged seventeen, living in St Botolph Bishopsgate but from an Essex family. The couple may have had four children, but their baptisms and subsequent careers have not been fully traced. Graunt was very friendly with that other scholar of demography and political arithmetic, Sir William Petty, but it is not known how they met. It has in fact been argued that Petty was the real author of the Observations, but modern opinion is against this viewpoint. After the Great Fire of 1666, Graunt found himself in financial difficulties, a situation not eased by his conversion to Roman Catholicism. He died on 18 April 1674 and was buried in the parish of St Dunstan in the West.

One of the main reasons that Graunt decided to investigate the bills of mortality with some precision was his wish to understand why so much social and economic dislocation was caused by high mortality, and especially the plague crises, in as important a city as London, which was among the most prosperous in the pre-industrial world. He thought that London was

3. See, for example, Creighton 1891a; George 1965; and Sutherland 1972.
5. Londoners often married at a young age, and in parishes in which neither partner was resident.
Introduction: The magnet of the metropolis

too large, ‘a head too big for the body, and possibly too strong’, and ‘that the troublesome seclusions in the plague time is not a remedy to be purchased at great inconveniences’. At this time, London’s importance was reflected both in its size and extent and also in its range of services and trading connections. Graunt attempted to calculate the number of London inhabitants, and at one point estimated a population of 384,000 (1662: 59–61), but elsewhere he gives 460,000 (ibid.: 42). The latter is a more accurate figure for the early 1660s, and the large discrepancy may be accounted for by different areas of the city being examined for each estimate. It is surprising that Graunt came so close to the modern estimates of the population of London.

Graunt understood one of the central points about London population trends which was that the city was increasing in population size at a faster rate than the remainder of the country (ibid.: 53–6), and that it ‘grows three times as fast as the body unto which it belongs’. He also calculated that the number of burials recorded in the bills of mortality was greater than the number of christenings, suggesting that the population would actually have fallen but for migration from the countryside, which accounted for all the growth that occurred.

The next observation is, that in the said bills there are far more burials than christenings. This is plain, depending only upon arithmetical computation; for in 40 years, from the year 1603, to the year 1644, exclusive of both years, there have been set down (as happening within the same ground, space, or parishes) although differently numbered, and divided, 363,935 burials, and but 330,747 christenings within the 97, 16 and 10 out-parishes, those of Westminster, Lambeth, Newington, Redriff [Rotherhithe], Stepney, Hackney, and Islington, not being included.

From this single observation it will follow, that London hath decreased in its people, the contrary thereof we see by its daily increase of building upon new foundations, and by the turning of great palaciously houses into small tenements. It is therefore certain, that London is supplied with people from out of the country, whereby not only to repair the overplus difference of burials above mentioned, but likewise to increase its inhabitants according to the said increase of housing.

Graunt estimated the extent to which London was dependent upon the countryside for migrants. He suggested that ‘if about 250,000 be sent up to London in the said 40 years, Viz. about 6,000 per annum, the said

7. Ibid.
8. Ibid., Epistle Dedicatory to Lord Roberts.
9. Ibid.: 41–2. Using the figures in Appendix 1, there were 437,495 burials and 329,867 christenings in London during the period mentioned by Graunt. Of the burials, 73,119 were attributed to plague in the bills. Other causes therefore accounted for 364,376 burials, giving figures which are very close to Graunt’s.
**Introduction: The magnet of the metropolis**

admission will make good the alterations, which we find to have been in and about London, between the years 1603 and 1644 above mentioned.\(^{10}\)

As well as outlining the main features of London population trends, Graunt also examined patterns of fertility and mortality in greater detail. He discussed causes of death in an elementary way (1662: 15–32), and he analysed the severity of the main plague years by calculating the extent to which the number of burials exceeded the number of christenings. Thus, he argued that the intensities of the 1603 and 1625 crises were of about equal magnitude, although he felt that in 1625 more died than were recorded as having done so (ibid.: 35–6). In optimistic fashion, he calculated that these plague outbreaks did not have much effect on London population growth, despite their severity. ‘Let the mortality be what it will’, he argued, ‘the city repairs its loss of inhabitants within two years’ (ibid.: 39). Graunt also devised the idea of the life table which is of fundamental importance in demographic analysis.

Graunt’s analysis of fertility was not as sophisticated as his studies of mortality, partly because less information was available to him in the bills of mortality. Other sources are required to study the London marriage pattern and household structures. All that the bills contain are lists of the total number of christenings in each year, so that it is very difficult to analyse strategies of family formation. Graunt’s conclusions about London fertility were ambiguous and he partly misread the evidence, although in one place he suggested that ‘the number of child-bearing women might be about double to the births; forasmuch as such women, one with another, have scarce more than one child in two years’ (ibid.: 60). This was probably about right with respect to marital fertility, for it implies mean birth intervals of about twenty-four months. However, the main conclusion of Graunt’s discussion about London fertility was that it was lower in London than in the countryside, a mistake duplicated by most of the classical demographers.

As to the cause of barrenness in London, I say, that although there should be none extraordinary in the native air of the place, yet the intemperance in feeding, and especially the adulteries and fornications, supposed more frequent in London than elsewhere, do certainly hinder breeding. For a woman admitting ten men, is so far from having ten times as many children, that she hath none at all.

Add to this, that the minds of men in London are more thoughtful and full of business than in the country, where their work is corporal labour, and exercises. All which promote breedings, whereas anxieties of the mind hinder it.\(^{11}\)

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10. Graunt 1662: 43. According to Appendix 1, the deficit of baptisms from 1604 to 1643 was about 108,000. During this period, the population grew from 178,000 to 307,000, or by 129,000 individuals. Therefore, a net total of 237,000 migrants was required over these forty years, an average of 5,925 per year, to account for the growth of London, which is very close to Graunt’s calculations.

Introduction: The magnet of the metropolis

Although Graunt’s analysis of the causes of low fertility in London is not very convincing, he should at least be credited with drawing the distinction between rural and urban demographic experience. In fact, marital fertility was probably higher in London than elsewhere, but rates of non-marital fertility were low and similar to other places. Overall fertility may have been more moderate because of late marriage, a point which the bills of mortality did not permit Graunt to consider.

The clarity of Graunt’s study of population trends in London obscures the complex social geography of the metropolis on the eve of the Great Fire which destroyed large portions of the city, and this is why many contemporaries did not fully understand the social and economic developments occurring in the capital during the seventeenth century. The physical appearance of the townscape just before the Fire did not differ greatly from that at the beginning of the century, except that the area it covered had increased considerably, as is shown in Figure 3.4, and even the broad outlines of its social pattern were not greatly altered by the rebuilding. London remained a walled city, with narrow streets, many churches, and timber-framed houses, although a few were constructed of brick and stone. It was much overcrowded, especially in the suburban tenements and in the lanes and alleyways immediately behind the substantial houses of the main streets.

During the seventeenth century, the metropolis was in a state of transition due to its rapidly growing population even though, as Graunt observed, its principal demographic features did not alter very greatly during his lifetime. In 1660, the chief contrast was between the wealthy central city and its peripheral suburbs and this had persisted throughout the period. However, much of the physical growth of the city was occurring westwards, as the dual centres of London and Westminster were merged by building developments. Other suburban nuclei in the East End and in Southwark, across the river, were also much enlarged.

This book will concentrate on the demography of the city itself although the growth of population in the suburbs deserves a full analysis. The chief aim of this brief description of Graunt’s work and background has been to indicate what may have been known to him and his contemporaries about the population of seventeenth-century London. As we have seen, Graunt’s sources and methods, and many of his conclusions, were adopted by later writers. This book will discuss how far new sources and methods of analysis confirm Graunt’s viewpoint, and it will cover new topics which cannot be studied from the bills of mortality. An examination of the internal demography of London will show how the population of an early modern metropolitan city differed from that of the country areas of England. The demographic structure of London will be investigated by detailed studies of fertility and mortality.

There are three main reasons why a re-examination of London popula-
Introduction: The magnet of the metropolis

tion trends in the seventeenth century is important: the size of the capital, the significance of its connections with the remainder of the country, and the discovery of new sources and methods of analysis. However large London had become by the beginning of the seventeenth century, Graunt's view that it was too large was the opinion of both the authorities and also of many inhabitants. From as early as 1580 the Crown and the city government had tried, but largely failed, to regulate the size of the city. They were concerned both with the difficulties of feeding its expanded population and with the threat to public order such a concentration of people could make. One of the main problems was that the city's jurisdiction did not spread into the Liberties and suburbs, in whose large parishes problems of local government were most severe (Brett-James 1935: 67–126, 296–308; Pearl 1961: 9–44). The widespread concern about the size of London is indicated by the nine separate proclamations issued by James I between 1605 and 1624 in attempts to regulate it.\(^\text{12}\) The proclamation dated 16 July 1615 commented that:

Our city of London is become the greatest or next the greatest cities of the Christian world. It is more than time that there be an utter cessation of further new buildings, lest the surcharge and overflow of people do bring upon our said city infinite inconveniences, which have been so often mentioned.\(^\text{13}\)

However, the repetition of these proclamations throughout James I's reign indicates that neither the Crown nor the city were able to stop the flow of migrants to London.

Several problems are involved in estimating the actual size of London during this period. There are no listings of inhabitants for the whole city, so calculations have to be made from the series of christenings in the bills of mortality, after having made an allowance for possible omissions and having found a suitable birth rate. At present, the best estimates suggest that the population increased from just over 100,000 in 1580 to about 200,000 in 1600 and 400,000 by 1650. These figures are a little lower than earlier calculations, but they suggest that this was the period when the rate of demographic growth was highest. Although much depends on what area of London is included, and whilst these estimates could be refined in the light of further research, they provide a good idea of the size of London's population at this time. Indeed, the problem of making estimates illustrates how little work has been undertaken in urban population history: a good deal is now becoming known about the historical demography of rural areas, but very little is understood about the towns.\(^\text{14}\) Table 1.1 demonstrates the usefulness of a study of the proportion of the population


\(^{14}\) Good surveys of recent findings include Schofield and Wrigley 1979; and Smith 1978.
Introduction: The magnet of the metropolis

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

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<thead>
<tr>
<th></th>
<th>1600</th>
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<th>1700</th>
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<tbody>
<tr>
<td></td>
<td>No. of</td>
<td>Approx. pop.</td>
<td>% of</td>
<td>No. of</td>
</tr>
<tr>
<td></td>
<td>centres</td>
<td></td>
<td>total</td>
<td>centres</td>
</tr>
<tr>
<td>Metropolitan</td>
<td></td>
<td></td>
<td>pop.</td>
<td></td>
</tr>
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<td>London</td>
<td>1</td>
<td>200,000</td>
<td>4.9</td>
<td>1</td>
</tr>
<tr>
<td>Other centres of 10,000+</td>
<td>3</td>
<td>35,000</td>
<td>0.9</td>
<td>6</td>
</tr>
<tr>
<td>Other centres of 5,000+</td>
<td>14</td>
<td>88,000</td>
<td>2.1</td>
<td>24</td>
</tr>
<tr>
<td>Total urban population</td>
<td>18</td>
<td>323,000</td>
<td>7.9</td>
<td>31</td>
</tr>
<tr>
<td>Total population of England</td>
<td>4,100,000</td>
<td></td>
<td></td>
<td>5,500,000</td>
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</tbody>
</table>

Sources: Corfield 1970: 40 table 1, 42 table 2; 1976; Smith 1978: 207 figure 8.3.

of England that inhabited urban centres of over 5,000 inhabitants. Towns of less than this size are excluded because many were hardly distinguishable from villages. The populations of these larger urban centres have been estimated from a variety of studies of their local histories, and so the totals given here are approximate, but they are sufficiently accurate to allow conclusions about the importance of London to be drawn. The urban population of England was quite small in 1600, accounting for only 8 per cent of the national total, but this proportion almost doubled during the seventeenth century as English society became more urbanized. However, more than half the urban population lived in London, and by 1700, London was more than twice the size of all the other urban centres combined. Thus, during the seventeenth century, London was growing much faster than the country as a whole and also faster than the other urban centres. In 1600, one Englishman in twenty was a Londoner, and by 1700 one in ten.

London was thus of great importance in English society and economy, not only because such a high proportion of the total population lived in the metropolis, but also because the high mortality rate meant that the population of London was unable to replace itself. This was argued very clearly by J. Patten (1978: 125):

The consistent picture was, however, that burials exceeded baptisms in every English town in the pre-industrial period. A few places by 1700 may have been able to replace themselves, but for most this was not the case; they were experiencing natural decrease. Yet . . . they grew, London enormously, some others quite quickly, and migration is clearly the key to an explanation of their growth.15

15. Also see Patten 1978: 17, 98, 236.
Introduction: The magnet of the metropolis

London was certainly able to attract migrants during the seventeenth century; indeed, people travelled to the capital from all over the country during the period before the Civil War. This was partly related to national demographic trends; according to the most recent estimates, the national population increased from 3 million in 1550 to 5½ million by 1650. During the succeeding century, the rate of growth slowed considerably and the total reached 6 million by 1750, after a period of temporary decline in the second half of the seventeenth century.16 Much of the history of pre-industrial England may be explained in terms of how the economy adapted itself to absorb increasing numbers, and through its own demand for goods London played a large part in improving the economy.

The internal demography of cities must be looked at in the context of the whole country. Urban death rates consistently exceeded birth rates, and in large metropolitan cities the death rate was very high compared with other areas. The greatest of the nineteenth-century English demographers, William Farr, was correct in believing that mortality rates were closely related to settlement size. He commented that ‘the mortality of districts is nearly as the 12th root of their densities’ (1885: 175). Even in small towns such as Banbury and Gainsborough, infant and child mortality rates were noticeably greater than in villages (Smith 1978: 210–11 table 8.3). The close residential proximity of urban inhabitants allowed diseases to spread relatively easily within the city, and high mortality was not completely offset by high fertility. In contrast, the birth rate was usually greater than the death rate in many country districts; rural populations were therefore growing. Thus the rate of natural increase was frequently positive in the countryside and negative in the cities. Migration to cities was the equilibrating mechanism which balanced the rural surplus with the urban deficit. The whole of the growth of population which occurred in metropolitan cities was due to migration from the countryside. The demographic history of many European towns follows this pattern (Hélin 1963; Deyon 1967; Bennassar 1969; Perrot 1970; Soliday 1974; Petraconne 1974; De Vries 1974; François 1975).

Cities affected the growth of national populations in three important ways. First, the rate of natural decrease in a city determined how many migrants were required to maintain its population. Secondly, and of equal significance, disregarding overseas migration, the proportion of the national population that was urbanized gives an indication of how much of the surplus population in the countryside could be absorbed by the towns. Thirdly, the relative gap in economic performance between town and countryside influenced the number of migrants from rural to urban areas. Thus, an expanding urban economy attracted migrants, and several

16. These estimates were made at the S.S.R.C. Cambridge Group for the History of Population and Social Structure and are reported by Smith 1978: 207 fig. 8.3.
successive poor years in the countryside encouraged people to travel great distances to seek work in towns.

London’s influence may be outlined as follows. It may be assumed that the death rate exceeded the birth rate by 10 per thousand in the city, whilst the birth rate was greater than the death rate by 5 per thousand in the remainder of the country, and the birth rate was 34 per thousand in town and country. Recurrent plague crises during the period suggest that the differences in vital rates may not be unrealistic for the purposes of these estimates; the actual levels of vital rates do not matter too much, for the connections between city and countryside were important whether 2,000 or 12,000 net migrants travelled to London each year. The population of the capital increased from about 70,000 to about 400,000 between 1550 and 1650, or by 3,300 inhabitants per year on average. When the population was 250,000, for example, the shortfall of births each year was 2,500, so that a net annual immigration of around 6,000 persons was required to maintain London’s growth. If these were survivors from a cohort half as large again at birth, then 9,000 births were necessary each year for London’s increase in population to be continued. The population of England in 1600 was about 4 million, so the total birth surplus would be 20,000 (the birth rate exceeds the death rate by 5 per thousand). London was therefore absorbing the natural increase of a population of almost 2 million, or about half the English national population. Similarly, if 200,000 people lived in London, and 4 million in England, and the birth rate was 34 per thousand throughout the country, then 6,800 births occurred each year in London and 136,000 in the rest of England. From the calculations above, 9,000 births were necessary to maintain London’s rate of growth, and there were 6,800 new births in the capital each year making a total of 16,000 births. Therefore, the survivors of about an eighth of the country’s births therefore became Londoners at some stage of their lives. London’s impact deepened still further during the century after 1650; Wrigley (1967) has shown from similar calculations, on which these are based, that the survivors of a sixth of all English births were destined to become Londoners.17

17. Recent work on the demography of Holland demonstrates even more clearly the importance of cities for population trends in the whole country. Over half the population was urbanized. One of the reasons for the failure of numbers to increase in the eighteenth century was that the growth of population in the countryside was completely absorbed by the deficit in the cities. Declining population in the early eighteenth century was connected with a decrease in economic activity, but the importance of Amsterdam itself was enhanced as the 'Randstad' system of cities was dissolved into city-regions based on Amsterdam and Rotterdam. See De Vries 1974 and 1978. A recent article by A. Sharlin has questioned the interpretation that metropolitan cities would have declined in population in the absence of rural-urban migration. He argued that most cities consisted of two kinds of people: permanent residents and temporary migrants. The permanent residents replaced themselves whilst the temporary migrants did not so that aggregate series of births and deaths which show a natural deficit obscure the fact that some groups
Introduction: The magnet of the metropolis

It ought perhaps to be stressed that the reasons for London’s growth are not just to be found within the context of its demographic experience, because population trends both affected and were influenced by the associated societal changes which occurred in London during the period preceding the revolutionary years of the mid seventeenth century. The general importance of London for the political events of the period is now well recognized, but London’s role in the national economy and society, around which the political significance of the capital hinged, is neither well researched nor fully understood. This is clearly not the place for a full examination of the complex changes associated with the transformation of London from an important, but compact, medieval city to a sprawling metropolis which essentially took place during the period covered in this book, but it should be evident that migration, which ensured the continued pre-eminence of London, occurred in the context of social and economic changes.

A central point to bear in mind is that the growth of London was completely uncontrolled and the authorities were unable to regulate the size of the capital. It is therefore important to consider why so many migrants travelled to London, often from long distances, rather than to other cities which must have been much closer. London was growing at the expense of the main provincial capitals and other centres. As we saw in Table 1.1, the population of London almost trebled during the course of the seventeenth century whereas the other cities only doubled in size. Another important question is why London’s rate of increase quickened during the third quarter of the sixteenth century. Given that the changes were unplanned, they must have operated through the market mechanism which connected the urban economy’s demand for labour with migration patterns. The links between population and the economy therefore flowed in both directions, with a natural deficit creating a need for migrants to maintain the size of the city, and a flourishing metropolitan economy encouraging new migrants from the remainder of the country. It should be added that the enhanced importance of London was facilitated by a number of institutional changes. A good deal of weight has been attributed to the dissolution of the monasteries as a cause for change because they provided land within the city on which part of the expansion occurred in the population did not rely on migrants. However, life table death rates demonstrate that in London natives were unable to replace themselves, as is reported in Chapter 5. This was also true of Geneva in the seventeenth century. Nevertheless, what Sharlin argued is at least partly true as the experience of natives and migrants differed in cities, and natives came closer to replacing themselves than migrants. In London, the migrants were more susceptible to plague, and they also married later which is indicative of lower fertility. Sharlin 1978.

18. This is explained in Pearl 1961; Brenner 1973; Ashton 1979.