

Urban fertility and mortality patterns

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(i) INTRODUCTION

DURING THE decades of the 1870s and 1880s, urban – and with it national – mortality, fertility and nuptiality patterns all appear to have almost simultaneously begun to enter a new era.¹ For the first time large industrial cities were proving themselves capable of combining high rates of expansion with improving (albeit very gradually before the twentieth century) mortality conditions for the majority of the urban working population. Secondly, marital fertility was apparently coming under tight control. Whereas previously fertility had been regulated in British society primarily through a set of institutional arrangements governing young adults' expectations of the appropriate economic circumstances under which marriage could be undertaken, now there were increasingly systematic attempts to control the chances of conception after marriage, as well.² There was also an increase in the rate of overseas migration (mainly from Britain's cities) during this period, the other principal component in the demographic equation, though this was never as influential a factor as in Ireland's demographic history.³ Thus, the demographic

¹ For accessible introductions, see N. Tranter, *Population and Society 1750–1940: Contrasts in Population Growth* (London, 1985); and M. Anderson, ed., *British Population History* (Cambridge, 1996).

² E. A. Wrigley and R. S. Schofield, *Population History of England* (London, 1981), chs. 10–11. For a recent review of developments in this field and interesting additional insights into the nature of institutional controls on marriage in early modern Britain, see S. Hindle, 'The problem of pauper marriage in seventeenth-century England', *Transactions Royal Historical Society*, 6th series, 8 (1998), 71–89.

³ The emigration rate was running at about 2.5 persons per thousand over the two decades before 1870 and rose to about 4.5 per thousand over the next four decades (during which period there was also a somewhat off-setting inflow from Eastern Europe), thereafter falling back to about 2.5 per thousand in the 1920s. These rates of emigration were dwarfed by Ireland's, which were as high as 14 per thousand in the 1850s, 1860s and 1880s. Scottish emigration rates ran at about 5 per thousand throughout the second half of the nineteenth century, but then increased to approximately 10 per thousand during the period 1900–30, when they exceeded Irish rates. D. E. Baines, *Emigration from Europe 1815–1930* (London, 1991), Table 3; and see also D. E. Baines, *Migration in a Mature Economy* (Cambridge, 1985).

history of urban Britain during the period 1840–1950 is particularly dominated by the dramatic changes in mortality and fertility occurring during the central decades of that period, c. 1870–1930, which will therefore constitute the primary focus of attention in this chapter.

These developments had many long-term implications for the social character and needs of Britain's cities. In the earlier nineteenth-century decades the proliferation of hordes of infants, children, youths and young men and women on the unpaved and unlit streets of the smoky, industrial 'frontier' towns was undoubtedly something which endowed them with a novel and threatening character, compared with the more familiar complexion of life in the older and slower-growing southern county, market and cathedral towns, including even London. The full cultural and political sociological implications of this novel age structure still remain to be explored by historians. But it can be safely asserted that the relentless youthfulness was caused by the combination of the new cities' expansion through substantial in-migration of young adults, the relatively high fertility of their inhabitants and the fact that they were expanding so fast in proportionate terms each decade (so that the relatively small cohorts of oldest residents were proportionately swamped by the much larger and ever-expanding successive cohorts of younger newcomers). The subsequent fall in fertility (initially partially offset by the dramatic improvements in infant survivorship achieved 1900–30) and the attenuated flow of migration from the de-populated countryside combined to produce a marked slow-down in the rate of growth of most cities from the beginning of the twentieth century. These were the principal demographic forces resulting in the twentieth-century 'ageing' of Britain's great industrial centres, whereby the world's new, vigorous shock cities of the mid-nineteenth century have matured to become the country's familiar 'senior citizens' in an architectural, residential and sociological sense, reflecting the relative 'greying' of their residents through an evening up of the balance of middle-aged and senior citizens relative to the young.

Historians and social scientists have long been attracted to the idea that these important demographic movements – the apparently almost simultaneous downturn in the mortality and fertility indices – must in some way be causally related to each other. This is the suspicion lying behind the long-influential notion that a 'demographic transition' necessarily results from the kind of sustained economic growth involved in industrialisation and the concomitant rise of a 'modern' urban society.⁴ However, attempts to verify empirically a direct relationship between mortality and fertility change in this period in Britain,

⁴ For the most influential formulation of the theory of demographic transition, see F. W. Notestein, 'Population – the long view', in T. W. Schultz, ed., *Food for the World* (Chicago, 1945), pp. 36–57; and for a critical history of the idea, see S. Szreter, 'The idea of demographic transition and the study of fertility change: a critical intellectual history', *Population and Development Review*, 19 (1993), 659–701.

including careful efforts to distinguish infant from child and other forms of mortality, have only resulted in negative or contradictory statistical findings.⁵ In this chapter, therefore, separate treatments of the history of changing urban mortality and fertility have been offered, reflecting the two distinct bodies of historiography.

(ii) URBAN MORTALITY PATTERNS

Two principal features dominate urban mortality patterns in the period 1840 to 1950: initially high death rates (extremely high in many industrial towns), which began to decline from about 1870; and a gradual shift in the main causes of death from infectious to chronic and degenerative diseases.⁶ The high death rate/high infectious disease rate regime, especially marked in the second and third quarters of the nineteenth century, was the result of unregulated industrial and urban growth, which reduced many residential areas in towns and cities across Britain to squalid, stinking dormitories. Whereas eighteenth-century citizens had often made successful efforts to clean up their towns and stave off the ravages of infectious disease, such efforts seem to have been insufficiently maintained during the first half of the nineteenth century.⁷ By 1840, urban Britain was highly insanitary, as Edwin Chadwick's great Sanitary Report of 1842 graphically documented and as the ensuing Health of Towns Commission confirmed.⁸

These urban environments formed a perfect breeding ground for endemic infectious diseases, as well as for that terrifying visitor, cholera. Badly ventilated and overcrowded houses, where families too often lived each to a room, with as many families in the house as there were rooms, encouraged the spread of diseases transmitted by droplet infection and close contact: whooping cough, measles, scarlet fever, smallpox and tuberculosis. Thousands of children died

⁵ M. Kabir, 'Multivariate study of reduction in child mortality in England and Wales as a factor influencing the fall in fertility' (PhD thesis, University of London, 1979); R. Woods, P. A. Watterson and J. H. Woodward, 'The causes of rapid infant mortality decline in England and Wales, 1861-1921', *Population Studies*, Part 1, 42 (1988), 343-66, part II, 43 (1989), 113-32.

⁶ For important recent historical epidemiological studies, see A. Mercer, *Disease, Mortality and Population* (Leicester, 1990); R. Woods and N. Shelton, *An Atlas of Victorian Mortality* (Liverpool, 1997); J. Vogeles, *Urban Mortality Change in England and Germany, 1870-1913* (Liverpool, 1998); A. Cliff, P. Haggett and M. Smallman-Raynor, *Deciphering Global Epidemics. Analytical Approaches to the Disease Records of World Cities, 1888-1912* (Cambridge, 1998); R. Woods, *The Demography of Victorian England and Wales* (Cambridge, 2000).

⁷ For eighteenth-century reforms and renovations see C. W. Chalklin, *The Provincial Towns of Georgian England* (London, 1974); P. J. Corfield, *The Impact of English Towns 1700-1800* (Oxford, 1982), ch. 7; James Riley, *The Eighteenth-Century Campaign to Avoid Disease* (London and Basingstoke, 1985); P. Borsay, *The English Urban Renaissance: Culture and Society in the Provincial Town, 1660-1770* (Oxford, 1989); Roy Porter, 'Cleaning up the Great Wen', in W. F. Bynum and R. S. Porter, eds., *Living and Dying in London, Medical History* (Supplement, 1991).

⁸ M. W. Flinn, ed., *Report on the Sanitary Condition of the Labouring Classes of Great Britain* (Edinburgh, 1965).

every year from secondary respiratory infections following on measles and whooping cough, because these diseases were considered as a child's rite of passage, and sufferers not put to bed and nursed, but allowed to run the streets as usual.⁹ Outbreaks of typhus, which is spread in the faeces of the human body louse, characterised times of economic depression, when families tried to economise on rent by doubling up in already inadequate accommodation.¹⁰ Toilet facilities were too often neglected and frequently completely insufficient for the number of people using them, resulting in endemic gastro-intestinal infections, of which typhoid and diarrhoea were the most fatal. Typhoid, indeed, flourished as urban water supplies deteriorated in quality – as raw sewage entered rivers and streams from which domestic water supplies were drawn in ever increasing quantities, and as pressures on urban land led to wells and cess pits being sunk too close together, so that leakage and soakage from one to the other was commonplace.¹¹ Festering deposits of domestic refuse and stable manure – the latter a massive problem in a horse-drawn society – constituted regular health hazards which local government struggled to contain into the early twentieth century. In particular, they formed splendid breeding grounds for flies which swarmed in their millions in Victorian cities in the summer months, and were heavily implicated as the vehicle of transmission for infant diarrhoea, which killed thousands of babies between July and October every year.¹²

As a group, the infectious diseases were responsible for some 40 per cent of all urban deaths around 1840, but by 1900 their mortality had fallen to less than 20 per cent. Typhus and smallpox had virtually vanished from the mortality tables; typhoid and tuberculosis were greatly reduced and still falling; scarlet fever had markedly reduced in virulence. Deaths from whooping cough had begun to decline, and even measles, diphtheria and diarrhoea were showing signs of diminishing fatality. While some of these decreased fatalities can be explained by improved water supplies (typhoid, cholera), or rising standards of personal hygiene and housing (typhus), or autonomous decreases in virulence (scarlet fever), the overall reduction in deaths from this group of diseases has been the

⁹ A. Hardy, *The Epidemic Streets* (Oxford, 1993), chs. 1, 2; A. Hardy, *Health and Medicine in Britain since 1860* (Basingstoke, forthcoming).

¹⁰ See A. Hardy, 'Urban famine or urban crisis? Typhus in the Victorian city', in R. J. Morris and R. Rodger, eds., *The Victorian City* (London, 1993).

¹¹ A. Hardy, 'Parish pump to private pipes: London's water supply in the nineteenth century', in Bynum and Porter, eds., *Living and Dying*.

¹² For the most convincing demonstration of the significance of flies in producing infant diarrhoea, see the outstanding article by Ian Buchanan: 'Infant feeding, sanitation and diarrhoea in colliery communities, 1880–1911', in D. J. Oddy and D. Miller, eds., *Diet and Health in Modern Britain* (London, 1985), 148–77. See also Nigel Morgan, 'Infant mortality, flies and horses in later nineteenth century or early twentieth century towns: a case study of Preston', *Continuity and Change* (forthcoming).

subject of a major historical debate, centring on Thomas McKeown's contention that improved nutrition leading to enhanced resistance was primarily responsible for their decline. McKeown acknowledged only a secondary contribution for public health measures, but others have given much greater weight to social intervention.¹³

In his concern to de-mythologise the achievements of medical science, McKeown placed primary emphasis on the importance of economic growth as his preferred alternative explanation for rising standards of health in the population. Primarily, he envisaged this occurring through increased real wages facilitating improved *per capita* nutritional intake. However, it has recently been argued that a diametrically opposite interpretation of the relationship between economic growth, urbanisation and health seems more consistent with the evidence of Britain's economic and demographic history.¹⁴ When the health of the industrial urban workforce is measured either through life tables or by the record of children's height attainments, there are unequivocal signs of serious deterioration during precisely the period of most pronounced *per capita* economic growth and rising real wages: the second and third quarters of the nineteenth century. This deterioration was not truly repaired until the last quarter of the century, or even later where infants are concerned.¹⁵

The sanitation, hygiene, crowding and poverty diseases were undoubtedly both the chief killers and the principal causes of feeble growth among the survivors: generations of children whose metabolisms were chronically starved of

¹³ The principal statement by Thomas McKeown was *The Modern Rise of Population* (London, 1976). The opposing case was made in S. Szreter, 'The importance of social intervention in Britain's mortality decline, c. 1850-1914: a reinterpretation of the role of public health', *Social History of Medicine*, 1 (1988), 1-37; and the ensuing debate: S. Guha, 'The importance of social intervention in England's mortality decline: the evidence reviewed', *Social History of Medicine*, 7 (1994), 89-113; S. Szreter 'Mortality in England in the eighteenth and nineteenth centuries: a reply to Sumit Guha', *Social History of Medicine*, 7 (1994), 269-82. Important historical studies documenting the nature of public health work and preventive medicine in Britain's nineteenth-century cities have included R. Lambert, *Sir John Simon 1816-1904 and English Social Administration* (London, 1963); F. B. Smith, *The People's Health, 1830-1910* (London, 1979); A. S. Wohl, *Endangered Lives* (London, 1983); Hardy, *Epidemic Streets*; J. M. Eyler, *Sir Arthur Newsholme and State Medicine, 1885-1935* (Cambridge, 1997).

¹⁴ S. Szreter, 'Economic growth, disruption, deprivation, disease and death: on the importance of the politics of public health for development', *Population and Development Review*, 23 (1997), 693-728.

¹⁵ S. Szreter and G. Mooney, 'Urbanisation, mortality and the standard of living debate: new estimates of the expectation of life at birth in nineteenth-century British cities', *Ec.HR*, 2nd series, 51 (1998), 84-112; for evidence on heights, see R. Floud, K. Wachter and A. Gregory, *Height, Health and History* (Cambridge, 1990). Note that the most recent research indicates more modest gains in national average real wages during the second quarter of the nineteenth century than previously suggested (though whatever gains there were would have been proportionately greatest among urban industrial, rather than rural workers): C. Feinstein, 'Pessimism perpetuated: real wages and the standard of living in Britain during and after the Industrial Revolution' *Journal of Economic History*, 58 (1998), 625-58.

energy for growth by the necessity of repeatedly waging battles against infectious diseases, often simultaneously sapped of strength because of bouts of diarrhoea in early childhood and heavy work regimes for older children.¹⁶ Why should health have deteriorated so markedly at this particular point in time in Britain's industrial cities? Given that British towns and cities, including even the megapolis of London, did seem to have been capable of combining both great size and rapid demographic expansion with the preservation or even enhancement of health, both during 'the long eighteenth century' (before the 1820s) and, again, from the 1870s onwards, there is no compelling logic behind the argument that it was simply the rapidity of urban growth or the size or density of settlement *per se* which can be held responsible for a deterioration at this point in time. It has consequently been argued, quite to the contrary of the McKeown thesis, that it was rapid economic growth itself which caused the health problems, by setting in train 'the four Ds' of disruption, deprivation, disease and death.¹⁷

According to this interpretation, economic growth entailed environmental disruption in Britain's expanding industrial cities, which critically required mechanisms of collective action to solve expensive problems relatively rapidly, in order to avoid undesirable health implications. However, the ideological, administrative, social and political disruption, which was itself integral to the kind of rapid economic growth which Britain was experiencing at this time, produced, instead, for two generations, a political and administrative stalemate where the health investments required by Britain's new towns were concerned. Neither old wealth and patrician authority, which had managed urban growth successfully in the eighteenth century, nor the proliferating factions of new men of commercial means and their various denominational allies could enforce any solution upon each other. *Laissez-faire* and the ratepayers' freedom from local taxes were all that such communities of mutually suspicious factions could agree upon. Furthermore, this principle of 'do-nothingism' was successfully carried from the local into the national political arena under the banner of 'local self-government', with Joshua Toulmin Smith's popular revolt in the early 1850s against Chadwick's attempt to impose from the centre a solution to the towns' health problems.¹⁸ In consequence, in the harsh and deteriorating conditions of ever more densely packed industrial towns, deprivation followed for those

¹⁶ On the 'insult accumulation' borne by urban children, who, faced with infant diarrhoea and respiratory dangers, were also subjected in their second year of life to biannual waves of whooping cough and measles, followed up in their third and fourth years by the depredations of scarlet fever and diphtheria, see R. Woods and N. Shelton, *An Atlas of Victorian Mortality*, ch. 8.

¹⁷ Szreter, 'Economic growth'.

¹⁸ J. Prest, *Liberty and Locality* (Oxford, 1990); for the most recent of a sequence of distinguished studies of Edwin Chadwick, see C. Hamlin, *Public Health and Social Justice in the Age of Chadwick* (Cambridge, 1998).

without voice and entitlement, notably, rural in-migrants and the Irish, women and children, and property-less males lacking skills in regular demand. The rough justice of industrial towns chronically lacking infrastructure investment ensured that the third 'D', disease, afflicted all; but death itself undoubtedly fell unequally – mainly upon the poor, rather than upon those few who could afford to escape to the genteel, residential suburb which each city acquired during this period, usually on its upwind, western side.¹⁹

By placing most weight on the changing political sociology of the nation and its industrial towns as the key to explaining their mortality history, this interpretation can comprehend the apparent anomalies of London's and Bristol's relative salubrity (because in both cases there were substantial incumbent patrician elites where the interests and beliefs of landlords, merchants and men of business had had much more time to come to some understanding and mutual accommodation, not to say intermarriage, to facilitate collective action), and also the fact that the crisis was apparently shared by all fast-growing industrial towns in the second quarter of the century, almost regardless of their size.²⁰ It can also explain the timing of environmental investments and associated mortality improvements when they eventually belatedly arrived, from the 1870s onwards in the largest industrial cities and somewhat later in smaller centres. For this was the point at which there emerged a bold and imaginative new 'urban patrician' class able to overcome the mid-century stalemate of ratepayer factionalism.

Paradigmatically personified in Joseph Chamberlain, elected mayor of Birmingham for an unprecedented three consecutive terms 1872–5, such leading local men of ambition and civic pride now found themselves able to enlist the political support of a newly enfranchised, non-property-owning working-class electorate (the 'compound' voter) to push through a series of ambitious and expensive measures, despite the continuing concerns of economising ratepayers, the petty bourgeoisie.²¹ This ushered in the era of collective, municipal activism known as the 'civic gospel', representing a long-overdue moral crusade to attack the structural causes of urban disamenity. In order to placate the very real concerns of the ratepayers the movement was also necessarily accompanied by

¹⁹ H. J. Dyos and D. A. Reeder, 'Slums and suburbs', in H. J. Dyos and M. Wolff, eds., *The Victorian City* (London, 1973), vol. 1, pp. 359–86; R. Dennis, *English Industrial Cities of the Nineteenth Century* (Cambridge, 1984), esp. chs. 3–8.

²⁰ W. A. Armstrong, 'The trend of mortality in Carlisle between the 1780s and 1840s: a demographic contribution to the standard of living debate', *Ec.HR*, 2nd series, 34 (1981); P. Huck, 'Infant mortality and living standards of English workers during the Industrial Revolution', *Journal of Economic History*, 55 (1995), 528–50.

²¹ On Chamberlain and Birmingham's civic gospel, see E. P. Hennock, *Fit and Proper Persons* (London, 1973); P. T. Marsh, *Joseph Chamberlain: Entrepreneur in Politics* (London, 1994), chs. 2–4. On the timing of the expansion of the working-class borough vote, principally 1869–84, see J. Davis and D. Tanner, 'The borough franchise after 1867', *HR*, 69 (1996), 306–27.

significant fiscal innovations: the indirect taxation of 'gas and water socialism' plus the use of massive long-term loans secured on the rates for the major capital projects, such as domiciliary water supply and mains sewerage.²² With the national electorate similarly broadened in a sequence of steps during the last third of the nineteenth century, the leaders of the national parties also found it increasingly in their interests to be seen to be sponsoring social, housing and public health legislation which could be plausibly presented as being in the interests of the respectable working man and his family, even if the interests of the slum dweller remained as yet beyond the pale of political calculation. In consequence, the period 1865–1914 can be characterised by a rising and cumulative momentum, albeit in fits and starts, with uneven geographical enthusiasm and certainly never with the active enthusiasm of the ratepayers, of social legislation and local initiatives and of preventive and public health activism interacting at both local government and national political level. This culminated in the wide-ranging set of social and health measures implemented between 1908 and 1914 by the New Liberal administration in Westminster.

Through this long, protracted set of contingent political developments, the disruption, deprivation, disease and death which proliferated in Britain's shock cities of the 1830s and 1840s was finally addressed. Eventually, this was achieved to such effect that by 1911 it is clear that the big industrial cities had pulled themselves round to equal London in salubrity, and thereafter they ran with London in an upper division of healthy urban areas.²³ Towns with populations of 10,000–100,000 seem to have been much slower to improve, beginning to make significant inroads into their death rates only in the interwar period.²⁴ By 1950, however, a marked levelling out in urban mortality rates generally had been achieved, with urban Britain, perhaps for the first time, almost as healthy as its rural counterpart.

Integral to this reduction in urban mortality, in epidemiological terms, was the displacement of the acute infectious diseases as leading causes of death, and the emergence of chronic and degenerative disease to prominence in their

²² On the financial importance of these fiscal innovations for municipal finance, see R. Millward and S. Sheard, 'The urban fiscal problem, 1870–1914: government expenditure and finance in England and Wales', *Ec.HR*, 2nd series, 48 (1995), 501–35; and on some of their origins in Chamberlain's business acumen, see Marsh, *Chamberlain*, chs. 3–4. Of course, as Avner Offer has shown, the urban rate burden on property did subsequently rise substantially but these devices crucially bought time before the burdens became obvious: A Offer, *Property and Politics, 1870–1914* (Cambridge 1981), esp. Parts III and IV.

²³ Crude death rates for Birmingham, for example, fell below the national average from 1921, for Sheffield from 1922.

²⁴ This is broadly consistent with Millward and Sheard's thesis that, independent of the issue of political will, there was also a hierarchy of borrowing powers among Britain's towns, such that the largest had access to the cheapest loans and therefore tended to undertake expensive improvements and services earlier: Millward and Sheard, 'Urban fiscal problem'.

stead.²⁵ In this transition, changing patterns of urban mortality played a critical part.²⁶ Measles was especially deadly in urban areas: in 1881–90, the twenty-eight great towns averaged 628 measles deaths per million population compared to 496 in the fifty large towns. Between 1871 and 1890, Lancashire (the most highly urbanised county in Britain), London and (oddly) Monmouthshire in that order, registered the greatest number of deaths from the disease, whether accounted by total population or by that under the age of five years.²⁷ Within towns and cities, however, levels often varied with locality: in Birmingham, for example, which had a clearly zoned social geography, death rates from both measles and whooping cough being highest in the poor inner-city wards, lower in the middle band, and lowest of all in the well-to-do suburbs of the city's outer ring, in a pattern which held good until the Second World War.²⁸ From the late 1880s, diphtheria was principally a killer only in towns, while scarlet fever and whooping cough followed similar patterns. Tuberculosis, however, had both a very varied regional pattern, and a more muted tendency to be more fatal in urban areas.²⁹

For the most part, death rates from the infectious diseases of childhood manifested a clear pattern of increase from South to North across the country as a whole.³⁰ In this they were similar to infant and maternal mortality, and to a number of other diseases, which repeated the classic pattern of the North/South divide, apparently already well established by 1840.³¹ Infant mortality, another standard predictor of social and sanitary conditions,³² was well known to be much higher in towns than in rural areas, as well as being higher north of a line drawn from the Wash to the Bristol Channel, and especially in Wales.³³ Even within the urban hierarchy, unexpected variations in infant mortality were to be found between different types of town: Leicester and Preston, for example, were

²⁵ This has been a general pattern in the developed world: A. R. Omran, 'The epidemiological transition: a theory of the epidemiology of population change', *Millbank Memorial Fund Quarterly*, 49 (1971), 516; S. Kunitz, 'Speculations on the European mortality decline', *Ec.HR*, 2nd series, 36 (1983), 349–64. ²⁶ See Hardy, *Epidemic streets*, chs. 1, 2.

²⁷ Supplement to the Registrar General's 55th Annual Report, PP 1895 XXIII part 1, p. xlviii.

²⁸ MOAR, Birmingham, 1901–39.

²⁹ Gillian Cronje, 'Tuberculosis and mortality decline in England and Wales, 1851–1910', in Robert Woods and John Woodward, eds., *Urban Disease and Mortality in Nineteenth-Century England* (London, 1984); and see below, n. 89. ³⁰ RGSR, 1931, pp. 38–9.

³¹ Suggestive research is presented in Paul Huck, 'Infant mortality in nine industrial parishes in northern England, 1813–1836', *Population Studies*, 48 (1994), 512–26. See also S. Szreter and E. Garrett, 'Reproduction, compositional demography and economic growth; family planning in England long before the fertility decline', *Population and Development Review*, 26 (2000), 45–80.

³² See G. Mooney, 'Did London pass the "sanitary test"? Seasonal infant mortality in London, 1870–1914', *Journal of Historical Geography*, 20 (1994), 158–74.

³³ Supplement to the Registrar General's 75th Annual Report, PP 1914–16 VIII, p. xxxviii.

neither in the first rank of English cities, but together they topped the infant mortality league in the years up to 1910.³⁴

The nature of local circumstances determining levels of infant mortality undoubtedly varied: unhygienic conditions, maternal health and employment, and nutrition, as well as wider environmental influences such as topography and the weather, all played a part. It is well known that national levels of infant mortality did not begin to fall until 1901, although a trend decline beneath the peaks of epidemic diarrhoea has been detected from the 1870s.³⁵ When the levels did begin to fall, they did so with a remarkable degree of uniformity in different areas, so that indefinable national and even international factors seem to have been at work. Local studies may in future be more suggestive of causes than national patterns. East London's Jewish community achieved infant mortality levels well below those for the rest of London by 1895, and ahead of the national decline, since Jewish domestic practices involved high standards of care and hygiene.³⁶ A recent study of four London boroughs has shown that poor social and economic conditions were a primary determinant of high infant mortality, and that the pace and degree of infant mortality decline after 1901 varied depending on both local social and economic conditions and on medical and welfare provision.³⁷

The three principal causes of infant mortality before 1914 were diarrhoea and gastro-enteritis, bronchitis and pneumonia, and prematurity. While prematurity proved harder to shift, levels of both diarrhoea and respiratory disease fell in the early decades of the twentieth century: diarrhoea rates nationally had halved their 1896–1900 levels by 1921–5, respiratory disease had similarly fallen by 1931–5.³⁸ In the same period, urban/rural differences narrowed, but did not disappear (Table 20.1). Diarrhoea and respiratory disease were largely urban diseases for infants, as was transmitted syphilis, whereas prematurity was scarcely influenced by urbanisation at all.³⁹ While immaturity remained an important contributor to neonatal deaths (first four weeks of life) throughout the period, being mentioned on some 50 per cent of neonatal death certificates as late as 1950, the 'density' differences shown by the categories used in Table 20.1 in the breakdown of neonatal mortality were significant.⁴⁰

From at least 1880, London had particularly low rates of neonatal death, only bettered by the county boroughs and small towns of southern England, and this was a characteristic it shared with some other cities, notably Liverpool. On the first day of life, indeed, there was little density distinction in the level of infant deaths, but after the first day excess mortality in the towns was rapidly established

³⁴ N. Williams and G. Mooney, 'Infant mortality in "an age of great cities"', *Continuity and Change*, 9 (1994), 191–6. ³⁵ Woods, Watterson and Woodward, 'Rapid infant mortality decline'.

³⁶ L. Marks, *Model Mothers* (Oxford, 1994), p. 49.

³⁷ L. Marks, *Metropolitan Maternity* (Amsterdam and Atlanta, 1996), chs. 3, 5.

³⁸ R.G.S.R., 1948–9, p. 33. ³⁹ *Ibid.*, 1923, pp. 21, 30. ⁴⁰ *Ibid.*, 1950, p. 4.

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Table 20.1 *Average infant mortality rates per 1,000 births 1911–1945*

	England and Wales	London	County boroughs	Urban districts	Rural districts
1911–14	110	108	125	107	90
1931–5	62	63	71	60	55
1943–5	47	48	54	46	41

Source: RGSR, 1948–9, p. 36.

and continued through the first year of life. None the less, the excess mortality of the North/South divide was greater than that of the county boroughs over the rural districts, and was strongly marked on the first day of life. The northern excess was both greater and more uniform than the urban, testifying to the importance of factors other than those predicted by town life *per se*, in particular the degree of industrial activity, and the nature and extent of sanitary provision.⁴¹ It was a distribution maintained throughout the period.⁴²

Refinements in qualitative and quantitative analysis of evidence relating to infant mortality – and other mortalities – seem likely to enhance understanding of these patterns. Recent research indicates that the nature of individual urban economies was a key factor determining levels of infant mortality, rather than size or density. Infant and other death rates were highest in industrialised towns, while both suburban areas and non-industrial towns were far healthier. Whereas infant mortality rates remained notoriously high in Leicester in the later nineteenth century, for example, rates in Blaby, immediately south of the city, declined. In the market town of Banbury, similarly, infant mortality fell more or less continuously between 1850 and 1900.⁴³ Thus a growing literature points to industrial cities rather than cities *per se* as being associated with high mortalities.⁴⁴

In sharp contrast to declining levels of infant mortality after 1901, levels of maternal deaths did not change for the better until 1937, and indeed rose for a

⁴¹ E. Garrett, A. Reid, K. Schurer and S. Szreter, *Changing Family Size in England and Wales: Place, Class and Demography in England and Wales, 1891–1911* (Cambridge, forthcoming); John M. Eyler, *Sir Arthur Newsholme and State Medicine, 1880–1935* (Cambridge, 1997), pp. 297–310.

⁴² RGSR, 1923, pp. 12–14; 1946, p. 24.

⁴³ N. Williams and C. Galley, 'Urban–rural differentials in infant mortality in Victorian England', *Population Studies*, 49 (1995), 407.

⁴⁴ Besides the article cited in the previous footnote, see P. Watterson, 'The role of the environment in the decline of infant mortality: an analysis of the 1911 census of England and Wales', *Journal of Biosocial Science*, 18 (1986), 457–70; Woods, Watterson and Woodward, 'Rapid infant mortality decline', Part I, 343–66; *ibid.*, Part II, 113–32; N. Williams, 'Death in its season: class, environment and the mortality of infants in nineteenth-century Sheffield', *Social History of Medicine*, 5 (1992), 71–94; Williams and Mooney, 'Infant mortality', 185–212; Garrett, Reid, Schurer and Szreter, *Population Change in Context*, chs. 4 and 6.

time.⁴⁵ As with infant deaths, there was a pronounced North/South divide in their distribution. John Tatham noted the regional divide for the decade 1881–90, recording that all the fourteen counties with rates in excess of the national average of 4.73 per 1,000 births lay north of a line drawn from the Humber to the Severn, while every one of the twenty-eight counties south-east of the line had below average rates.⁴⁶ This distribution had, however, little to do with urbanisation.⁴⁷ Indeed, the large cities, which possessed organised maternity services and relatively effective obstetric care tended to have lower rates of mortality than other urban areas, in a pattern that remained broadly consistent between the 1880s and the 1930s.⁴⁸ London, for example, in the years 1891–1910, consistently had the lowest death rates from causes other than puerperal sepsis, and in the twentieth century remained well ahead of other urban areas in its favourable maternal death rates.⁴⁹ The aggregate experience of a city could, however, mask significant local variations: in early twentieth-century London, marked differences in levels of maternal mortality between boroughs reflected variations in the local provision of maternity care.⁵⁰ Although maternal death rates plummeted following the introduction of the sulphonamide drugs in 1936, and again following that of penicillin, differential rates between the different density categories remained, reflecting the greater accessibility of treatment in urban areas.⁵¹ Meanwhile, the extension of blood transfusion techniques after 1940 reduced the dangers of shock and haemorrhage in childbirth, and contributed to further lowering of maternal death rates. By 1950, maternal mortality rates in rural areas were more than twice those of London (Table 20.2).

It was not until after the First World War that the changing age structure of Britain's urban population began to direct concern towards mortality patterns among the old. In 1911, the over seventies constituted under 3 per cent of the population of England and Wales, by 1921 they had reached 3.4 per cent and by 1931, 4.3 per cent. Partly as a reflection of the growing importance of these deaths, certification of deaths in old age began to become more precise, so that the number of deaths certified simply as from 'old age' was greatly reduced. Deaths attributed to bronchitis in this age group also fell; in partial compensation the attributions to heart disease and cancer rose.⁵² The implications of this

⁴⁵ For the changing pattern of maternal mortality see Irvine Loudon, *Death in Childbirth* (Oxford, 1992), chs. 14, 15.

⁴⁶ Supplement to the Registrar General's 55th Annual Report, PP 1895 XXIII part 1, p. lii. For the regional variations see also Loudon, *Death in Childbirth*, pp. 251–3.

⁴⁷ Supplement to the Registrar General's 75th Annual Report, PP 1914–16 VIII, pp. xci–xciii.

⁴⁸ Loudon, *Death in Childbirth*, p. 252.

⁴⁹ Supplement to the Registrar General's 75th Annual Report, PP 1914–16 VIII, p. cciii.

⁵⁰ Marks, *Metropolitan Maternity*, chs. 3, 6.

⁵¹ RGS, 1947, p. 221. For the impact of the sulphonamides see Irvine Loudon, 'Puerperal fever, the streptococcus and the sulphonamides 1911–1945', *British Medical Journal*, 2 (1987), 485–9.

⁵² *Ibid.*, 1935, pp. 41–2.

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Table 20.2 *Maternal mortality per 1,000 live births according to urban density*
1921-1949

	London	County boroughs	Urban districts	Rural districts	England and Wales
<i>1921-5</i>					
Sepsis	1.36	1.61	1.29	1.25	1.40
Other causes	1.63	2.42	2.69	2.84	2.50
Total	2.99	4.03	3.98	4.09	3.90
<i>1931-5</i>					
Sepsis	1.50	1.69	1.77	1.82	1.76
Other causes	1.66	1.94	2.48	3.01	2.54
Total	3.16	3.63	4.25	4.83	4.30
<i>1948-9</i>					
Total ^a	0.48	0.92	1.07	1.23	0.99

^aDeaths per 1,000 live and still births.

Source: R.G.S.R., 1921-39.

changing age structure for urban mortality patterns with respect to cause of death are still obscure; as the medical officer for Birmingham noted in 1931, it was difficult to know how much the apparent increases in heart disease and cancer were due to better diagnosis and how much to the increase in the numbers of elderly people.⁵³ Differing age structures in different types of town, and within towns, also existed. Two of the great cities, for example, Glasgow and Birmingham, the one noted for poverty and deprivation, the other for relative prosperity and with a reputation for healthiness, both contained below average populations of the elderly between 1901 and 1951 (Table 20.3). This may have been a common feature of great city populations (Table 20.4). Furthermore, there were significant differences in survival rates between the poorer and wealthier quarters of Birmingham: in 1931, 34.7 per cent of deaths in the inner wards occurred at ages over sixty-five; in the more salubrious outer suburbs, the percentage was 41.8.⁵⁴

Occupational structure was another factor which helped to differentiate the mortality experiences of individual towns and cities, and the local effects of occupation and industrial environment were very various. During the course of the nineteenth century, legislation went some way to reducing the prevalence of some of the worst industrial diseases, such as Sheffield knife grinders' lung, or the phossy jaw endured by girls working in the match industry.⁵⁵ But other

⁵³ MOAR, Birmingham, 1931, p. 13.

⁵⁴ *Ibid.*, p. 12.

⁵⁵ See Wohl, *Endangered Lives*, ch. 10.

Table 20.3 *Populations aged over sixty-five, percentage of total population, Birmingham, Glasgow and England and Wales 1901–1951*

	1901	1921	1931	1951
Birmingham	3.3	4.7	—	9.2
Glasgow	3.1	—	5.6	8.6
England and Wales	4.7	6.1	7.4	10.9

Sources: MOAR, Birmingham and Glasgow.

industrial factors continued to affect urban mortality patterns, notably, for example, the pall of smoke from industry and from domestic fires which overhung the northern industrial towns, and which was associated with excess rates of respiratory illness, and with endemic rickets among poorly nourished small children.⁵⁶ In Oldham, for example, it was estimated that 960 tons of soot were deposited per square mile within the city area in the year 1914–15, with consequences for the health and welfare of local people.⁵⁷ Such environmental consequences were at least in part responsible for the generally high levels of mortality in mining communities, even if not among working miners themselves.⁵⁸ Working conditions in factories were a further consideration, not just for the textile towns of the North, but in other industries. The boot and shoe factories of Leicester and Northampton, for example, were known to contribute to increased rates of respiratory tuberculosis in those towns.⁵⁹

A wide variety of factors thus contributed to the construction both of a town's individual mortality experience and to its placing within any general patterns of urban mortality. A comparison of the mortality patterns of four county boroughs (Bolton, Northampton, Reading and Warrington) in the years 1911–13 illustrated the complexity of the determinants of mortality levels in these comparably sized towns. There was, for example, no close relationship between mortality and real wage levels: Reading, with 23 per cent of working-class families in poverty had less mortality at every age of life than the other three towns, whose poverty ratings stood at 8 per cent (Bolton and Northampton) and 13 per cent (Warrington). The two northern towns had the worst mortalities overall, with little to chose between them, and also had the most overcrowded dwellings. Yet overcrowding was by no means the principal determinant of mortality

⁵⁶ Domestic smoke was a far from inconsiderable factor in nineteenth-century air pollution. It was, for example, very largely the cause of the notorious London fogs of the period. For its connection with rickets see A. Hardy, 'Rickets and the rest: childcare, diet and the infectious children's diseases', *Social History of Medicine*, 5 (1992), 389–412.

⁵⁷ Leonard Hill and Argyll Campbell, *Health and Environment* (London, 1931), pp. 2, 71–5.

⁵⁸ Supplement to the Registrar General's 75th Annual Report, PP 1914–16 VIII, p. xxxii.

⁵⁹ Major Greenwood, 'The influence of industrial employment on general health', *British Medical Journal*, 1 (1922), 753.

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Table 20.4 *Estimated mean populations aged over sixty-five in selected cities 1921-1930, percentage of total population*

Greater London	6.5	Stoke	4.3
Bethnal Green	3.3	Swansea	5.2
Bolton	5.6	York	6.6

Source: RGS, 1931, table 4.

by the 1910s. Housing conditions in Northampton, where 8.7 per cent of working-class houses were overcrowded, were considerably better than those of Reading (13.5 per cent overcrowded), yet it was only in the age group twenty-five to forty-five that Northampton's death rates approached parity with those of Reading.⁶⁰ Bolton and Warrington, like the rest of the North-West, suffered high death rates from pneumonia. Their death rates from respiratory tuberculosis, however, were on a par with those of Reading at ages up to twenty-five; it was only at ages forty-five to sixty-five that their tuberculosis rates became markedly worse than those of the other two towns. Taken in all, this interurban comparison did not reveal, in its author's words, 'some one industrial factor in the northern towns which destroys life'.⁶¹

Against this background, it is unsurprising that relatively little is known of the impact of war and economic depression in the twentieth century on specifically urban mortality patterns. Once again, historical studies have tended to focus on overall experience at the national levels with selected local examples, and detailed studies of the local and comparative impact of these events remain a future research undertaking.⁶² The likelihood is that war, especially the First World War when food rationing was in its infancy, had some differential impact on local civilian death rates depending on the age structure of the local population and the type of employment available in different urban areas, yet evidence on this subject needs to be treated with caution. The issue of the increased death rates for respiratory tuberculosis during the First World War, for example, which has provoked controversy over the respective roles of housing and nutrition in its genesis, may yet prove to be more complex when investigated at local level, or within the general pattern of urban mortality experience.⁶³ In Glasgow, for instance, tuberculosis death rates continued to fall during the First World War from a relative peak in 1915, while in Scotland as a whole rates remained raised

⁶⁰ *Ibid.*, p. 711. ⁶¹ *Ibid.*, p. 712.

⁶² In the current literature see J. M. Winter, *The Great War and the British People* (London and Basingstoke, 1986); Linda Bryder, 'The First World War: healthy or hungry?', *History Workshop Journal*, 24 (1987), 141-57; H. Jones, *Health and Society in Twentieth-Century Britain* (London, 1994); and references cited below in nn. 61 and 66. ⁶³ See Bryder, 'First World War'.

for the duration of the war. The city suffered a relatively much greater and more sustained rise in tuberculosis rates during the Second World War, which lasted from 1940 through to 1948. In 1950, tuberculosis notification rates in Glasgow were still 48 per cent above their pre-war average.⁶⁴ In Birmingham, the tuberculosis death rates remained in line with pre-war figures during the First World War, rising a little in 1917, and only markedly in 1918, the year of the Spanish influenza. But both Birmingham and Glasgow, like Scotland and England and Wales, experienced a sharp fall in registered tuberculosis deaths in 1919.⁶⁵ During the Second World War, Birmingham's tuberculosis experience was again not fully consistent with the national pattern. The city's tuberculosis death rate stood at 71·2 per 100,000 population between 1934 and 1938, but rates rose to 77 in 1939, 1940 and 1942, with a peak of 81 in 1941, before resuming the decline at pre-war level in 1943. In neither war, therefore, did these two sample cities' respective experiences with tuberculosis meet the norm as set by national figures (that is, increases in the death rate between 1914 and 1916, and in the first years, 1940–2, of the Second World War).⁶⁶

Urban mortality experience during the post-war depression and in the 1930s is likely to have been equally various and dependent on local circumstances. If tuberculosis rates are taken as some index of social well-being, it may be possible to compare the effects of depression on different cities. Glasgow's tuberculosis rates, for example, fell after the First World War until 1926, and thereafter fluctuated at around 80 per 100,000 before rising sharply to over 100 in 1940. In Birmingham, where a mixed industrial economy protected the city from the worst of the Depression, the rates remained relatively stable between 1919 and 1933, falling sharply in 1934.⁶⁷ In these years, moreover, death rates in the poorest wards moved much closer to the average of the city as a whole, although serious differences between them remained.⁶⁸

In fact, discrepancies in urban experience in the interwar period generated heated debates among contemporaries, and have subsequently exercised historians, on issues of poverty, housing and ill-health.⁶⁹ Infant mortality continued to vary considerably between towns and within them, while reductions in

⁶⁴ MOAR, Glasgow, 1950, p. 9. For Glasgow's tuberculosis experience, see Neil McFarlane, 'Hospitals, housing and tuberculosis in Glasgow, 1911–51', *Social History of Medicine*, 2 (1989), 59–85.

⁶⁵ The influenza epidemic is undoubtedly a complicating factor in the picture; government disability allowance policies in wartime may also have been influential: see MOAR, Northampton, 1924, p. 28. On government policy, see S. M. Tomkins, 'The failure of expertise: public health policy in Britain during the 1918–19 influenza epidemic', *Social History of Medicine*, 5 (1992), 435–54. ⁶⁶ Winter, *The Great War*, p. 139. ⁶⁷ MOAR, Birmingham, 1950, p. 24. ⁶⁸ *Ibid.*, 1931, p. 11.

⁶⁹ See Charles Webster, 'Healthy or hungry thirties?', *History Workshop Journal*, 13 (1982), 110–29; Charles Webster, 'Health, welfare and unemployment during the Depression', *P&P*, 109 (1985), 204–30; John Stevenson and Chris Cook, *Britain in the Depression*, 2nd edn (London and New York, 1994), ch. 3.

tuberculosis mortality were smaller in depressed areas of the country than in the more prosperous areas; in 1931–5, for example, the tuberculosis death rate for women aged fifteen to thirty-five was more than twice as high as the national average in Gateshead, South Shields and Merthyr Tydfil.⁷⁰ By 1950, these cities still had among the highest tuberculosis death rates in the country for both men and women, although Bootle, Lancashire, retained a historic pre-eminence in the tuberculosis league, with death rates in 1950 of 942 per million living for men and 721 for women compared with its nearest rivals, Tynemouth (916 for males) and Merthyr (625 for females).⁷¹

Tuberculosis remained a problem in several urban areas into the 1950s, notably in the Tyneside and Merseyside conurbations, in Walsall, West Bromwich and Smethwick in the Black Country of the West Midlands, and in all urban areas of Wales.⁷² While housing problems, poverty and employment are all likely to have played a part in determining relative prevalence, other factors could be considered. For some years after the end of the war, rising numbers of tuberculosis deaths among elderly men in Greater London caused concern. Among contemporary explanations offered were that these men had borne the stress of two world wars, and that the reactivation of early infection was critical in killing them. In 1947, their death rate was especially striking – and the Registrar General speculated that it had been brought about by the stress of life in the underground bomb shelters during the war. Death rates from tuberculosis among women by contrast, maintained a steady decrease between 1931 and 1947.⁷³

One notable change in urban mortality patterns which was of less demographic than social consequence was the altering distribution of place of death within urban areas: between 1840 and 1950, people increasingly died not at home, but in institutions. During the nineteenth century old people especially, but after *c.* 1870 also young children, increasingly began to die in hospital. The introduction of the New Poor Law in 1834, with its ‘less eligibility’ principle, followed by the disassociation of the poor law infirmaries from the workhouses in 1867, meant that growing numbers of the elderly and chronic sick poor resorted to the infirmaries as debility and poverty overtook them. Meanwhile, the introduction of isolation hospitals for infectious disease cases after 1870 meant that more children died away from home. In London as a whole, 16 per cent of deaths occurred in institutions in 1861, but this had reached nearly 30 per cent by 1901. In the different registration districts, increases might be even more striking: the proportion of institutional deaths rose from 19 to 63 per cent in the Strand district between 1861 and 1901, while in the City it rose from 23 to 66 per cent.⁷⁴ This pattern replicated itself in provincial towns and cities,

⁷⁰ Stevenson and Cook, *Depression*, pp. 51, 55. ⁷¹ RGSR, 1951, p. 121. ⁷² *Ibid.*

⁷³ *Ibid.*, 1948–9, p. 97. ⁷⁴ Williams and Mooney, ‘Infant mortality’, 188–9.

although the greater level of hospital provision in the latter probably accelerated local trends. In Northampton, deaths in institutions rose from 30 per cent of all deaths in the 1920s to nearly 50 per cent by 1939; in Birmingham they were 40 per cent in 1925, but over 50 per cent by the mid-1930s.⁷⁵

The rising proportion of elderly people in the population, and to a much lesser degree rising accident rates with the increasing popularity of the motor car, contributed substantially to this trend, especially as death rates for the infectious diseases of childhood declined. In mid-1920s Birmingham, for example, 23 per cent of all deaths occurred in poor law institutions, a mere 2.8 per cent in 'publicly provided Fever Hospitals, etc.'⁷⁶ The transfer of many poor law infirmaries into the municipal sector following the Local Government Act 1929 accelerated this trend. City public health departments increasingly used the municipal hospitals as a care facility for elderly people: after the transfer of the hospitals to the National Health Service in 1948, medical officers complained about the growing difficulty of obtaining hospital admission for chronic elderly patients.⁷⁷ The pressures, however, remained. With post-war housing shortages and a growing reluctance among families to care for elderly relatives within their own homes, institutional care met a persistent social problem.⁷⁸

By the interwar period, significant changes in the pattern of causes of death were also emerging. The reduction in importance of the acute infections as causes of death, together with the ageing of the population, began to tilt the balance of causation towards long-term and degenerative diseases. The detailed geography of this newly emerging shift in the pattern of death remains obscure, but it seems likely that it began in the countryside, where life expectancies had long been higher. Many aspects of this transition are complicated by problems of diagnosis and changing medical fashion. For instance, the rise in deaths from late-onset diabetes which began in the later nineteenth century in part reflected a new medical awareness of the condition, while the fact that the disease appeared to be more frequent in towns could be a result of that awareness.⁷⁹ None the less, it is significant that death rates from late-onset diabetes fell during the First World War, and rose again after 1918: the condition is associated with obesity and a sedentary life style, and rising incidence indicates growing levels of consumption which were temporarily suspended by the relative deprivation of the war years.⁸⁰ The regional and density variations in this pattern are unclear.

The distribution of cancer deaths is more readily accessible, since medical

⁷⁵ See MOAR. ⁷⁶ MOAR, Birmingham, 1925, p. 20. ⁷⁷ *Ibid.*, Glasgow, 1951, p. 10.

⁷⁸ *Ibid.*, Birmingham, 1948-9, p. 14. For the changing balance of emphasis on family and community care see J. Lewis, 'Family provision of health and welfare in the mixed economy of care in the late nineteenth and twentieth centuries', *Social History of Medicine*, 8 (1995), 1-16.

⁷⁹ Supplement to the Registrar General's 65th Annual Report, PP 1905 XVIII, p. cii. See also Anne Hardy, 'Death is the cure of all diseases: using the General Register Office Cause of Death statistics for 1837-1920', *Social History of Medicine*, 7 (1994), 485-6. ⁸⁰ RGSR, 1931, p. 70.

observers soon suspected environmental influences operating on that distribution. Stomach cancer, for example, was by the 1940s seen to be heavily influenced by environmental factors, operating especially in the northern industrial towns, and producing wide differences between rates in different towns. Between 1921 and 1939, Bootle, Birkenhead, Oldham and Swansea were among the top eight county boroughs for stomach cancer among both men and women (crude mortality rate (CMR) averages between 20 and 40 per cent), while Bournemouth, Canterbury and Burton-on-Trent had among the lowest rates for both men and women in a group of eleven low-rate towns (CMR ranging from 25 to 45 per cent below the mean).⁸¹ Cancer of the uterus, meanwhile (like breast cancer known to be correlated with fat consumption), showed marked disparities between density groups at ages forty-five to sixty-four: in 1947 the rates stood at 455 per million for the county boroughs, 400 for the urban districts, 338 for Greater London and 321 in the rural districts.⁸² Death rates for the respiratory cancers showed an even clearer link to urban density for both sexes between 1940 and 1949, from a maximum in Greater London to a minimum in the rural districts, though always greatly higher for men.⁸³

While the increase of deaths from respiratory cancer in the twentieth century was recognised to be real, rising absolute mortalities from peptic ulcer, coronary heart disease, arterio-sclerosis and cancer generally reflected the shifting age structure of the urban population.⁸⁴ In 1950, the medical officer for Birmingham noted that if corrected for age, female cancer mortality in the city had fallen in the twentieth century, and the rise in male deaths was only small. Only the 'undue' rises in the cancers of the lung and prostate stood out as separable from improvements in diagnosis.⁸⁵

Between 1840 and 1950 Britain experienced an epidemiological transition from a high-mortality regime dominated by infant death and infectious disease to a low-mortality one, where older adult and chronic disease predominated. However, the timing of the transition may well have been rather uneven. As described above the most recent research confirms contemporaries' perceptions of a severe deterioration in industrial towns and cities in the 1830s and 1840s. Thereafter, William Farr recorded some improvement in crude mortality rates in the later 1850s in many towns.⁸⁶ However, the new life tables constructed for the largest British cities demonstrate that although the 1850s may have brought alleviation of the atrocious levels of mortality prevailing in the 1830s and 1840s, there was no further improvement between the 1850s and 1860s. It was only thereafter, during the last three decades of the century, that increases in life expectancy at birth of between two and eight years were finally registered in all

⁸¹ *Ibid.*, 1947, p. 169. ⁸² *Ibid.* ⁸³ *Ibid.*, 1948-9, p. 160. ⁸⁴ *Ibid.*, p. 158.

⁸⁵ MOAR, Birmingham, 1950, p. 43.

⁸⁶ Supplement to the Registrar General's 25th Annual report, PP 1865 XIII, pp. 28-33.

Table 20.5 *Expectation of life at birth in selected cities in England and Wales 1861–1901*

Cities	1861–70	1891–1901
London	38	44
Manchester	31	38
Liverpool	30	38
Birmingham	37	42
Bristol	40	47
Salford	35	37
Hull	38	44
Portsmouth	42	46
Bolton	37	42
Brighton	41	47
Sunderland	39	41
Cardiff	41	45
Norwich	40	47
Preston	35	39

Source: illustrative selection from S. Szreter and G. Mooney, 'Urbanisation, mortality and the standard of living debate: new estimates of the expectation of life at birth in nineteenth-century British cities', *Ec.HR*, 2nd series, 51 (1998), tables 1, 8.

the large cities, taking them into historic new territory, above forty years in several places (Table 20.5).⁸⁷

A 1930 survey of mortality patterns in William Farr's healthy (rural) districts between 1851 and 1925 identified the periods of greatest improvement in mortality for both the healthy districts and for England and Wales as a whole as the years 1881–90 and 1901–25.⁸⁸ Investigations by Thomas McKeown and his colleagues also indicated the eighth decade of the nineteenth century and the first two decades of the twentieth as periods of considerable significance for mortality in England and Wales.⁸⁹ Studies of the experiences of individual cities tend to confirm this picture for the nineteenth century.⁹⁰

⁸⁷ See Szreter and Mooney, 'Urbanisation'.

⁸⁸ E. Lewis-Faning, 'A survey of the mortality of Dr Farr's 63 healthy districts of England and Wales during the period 1851 to 1925', *Journal of Hygiene*, 30 (1930), 152.

⁸⁹ T. McKeown and R. G. Record, 'Reasons for the decline of mortality in England and Wales during the nineteenth century', *Population Studies*, 16 (1962), 117–18; T. McKeown, R. G. Record and R. D. Turner, 'An interpretation of the decline of mortality in England and Wales during the twentieth century', *Population Studies*, 29 (1975), 392–3.

⁹⁰ See, for example, Barbara Thompson, 'Infant mortality in nineteenth-century Bradford', in Woods and Woodward, eds., *Urban Disease*, p. 136; Robert Woods, 'Mortality and sanitary conditions in late nineteenth-century Birmingham', in Woods and Woodward, eds., *Urban Disease*, p. 185.

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The detailed timing and cause of death geography of Britain's changing urban mortality patterns in the crucial century between 1840 and 1950 is only now beginning to be researched.⁹¹ Nevertheless, a pattern of significant variations in urban mortality experience is clearly visible beneath the national picture which does not support either McKeown's nutritional hypothesis or the more general assumption that economic growth straightforwardly leads to improved health.⁹² Recent research points to the significance of both public health interventions and local patterns of self-help and welfare provision in determining such local variations.⁹³ The research projects currently nearing completion will extend our understanding of the processes at work in Britain's epidemiological transition, but the agenda on the importance of social intervention and political will in activating Britain's mortality decline remains open for further exploration.⁹⁴

(iii) FERTILITY AND NUPTIALITY

In addressing the history of urban fertility in the period 1840–1950, the predominant feature was the pronounced secular decline in marital fertility which all sections of British society, rich and poor, Anglican and nonconformist, Welsh, English, Scots and Irish, experienced at some point after the 1860s.⁹⁵ Illegitimate

⁹¹ Woods and Shelton, *An Atlas of Victorian Mortality*.

⁹² McKeown's argument would predict that the urban workers with their higher real wages and greater access to a more varied food supply should have been leading a decline in mortality from the mid-nineteenth century at the latest. This was not the case, however. As Szreter, 'Social intervention', 11–14, pointed out, McKeown's thesis was particularly dependent on the decline in TB as providing the principal evidence in favour of the thesis that nutritional improvements due to rising living standards were the primary source of health improvements in the nineteenth century. It is therefore significant that Woods and Shelton have concluded from their recent exploration of the detailed geography of pulmonary tuberculosis that it no longer makes sense to see improvements in living standards as a major candidate in accounting for the decline in TB because they could find no sensible pattern in the geography of its relative incidence in Britain's 600 or so registration districts throughout each decade of the second half of the nineteenth century, in terms of an urban–rural, wealthy–poor differential: Woods and Shelton, *An Atlas of Victorian Mortality*, ch. 8, esp. p. 114.

⁹³ See Hardy, *Epidemic Streets*; Eyler, *Sir Arthur Newsholme*; Marks, *Metropolitan Maternity*; James C. Riley, *Sick Not Dead* (Baltimore and London, 1997).

⁹⁴ Szreter, 'Social intervention'; Hardy, *Epidemic Streets*; C. Nathanson, 'Disease prevention as social change: toward a theory of public health', *Population and Development Review*, 22 (1996), 609–37; Szreter, 'Economic growth'. Current research projects are moving this agenda forward, as described in Bill Luckin and Graham Mooney, 'Urban history and historical epidemiology: the case of London, 1860–1920', *UHI*, 24 (1997), 37–55; Millward and Sheard, 'Urban fiscal problem', 501–35; F. Bell and R. Millward, 'Public health expenditures and mortality in England and Wales, 1870–1914' *Continuity and Change* 13 (1998), 1–29.

⁹⁵ For England and Wales the principal source is: census of 1911, vol. XIII, *Fertility of Marriage Report (FMR)*, Part 1, Cd 8678 PP 1917–18 xxxv; *Fertility of Marriage Report*, Part 2, Cd 8491, was published separately (not as a Parliamentary Paper) by HMSO in 1923. See also *Census of Scotland 1911*, vol. III, Section F (PP 1914 XLIV); *Census of Ireland 1911*, General Report, section XIV (PP 1912–13 CXVIII). There are indications of slightly lower marital fertility already in the 1860s and perhaps the 1850s among some sections of urban society, such as certain professionals and those

fertility also fell dramatically at the same time. However, contrary to popular pre-conceptions, even in London illegitimacy does not seem to have played a particularly central or leading role in the history of specifically urban fertility during the period 1840–1950. In an international, comparative perspective illegitimate fertility was generally remarkably low throughout the British Isles, including Ireland.⁹⁶ It was only relatively high (for Britain) in exclusively rural areas: the counties of East Anglia, the Welsh borders, Yorkshire (but not the West Riding) and, especially, in the north-east and south-west Scottish counties (i.e. excluding Glasgow and Edinburgh).⁹⁷

As officially stated in the Report of the Royal Commission on Population of 1944–9, it has always been acknowledged that the rapidly falling birth rate must have been in some sense associated with the expansion of urban society, if for no better reason than that the well-established demographic findings from official sources show that agricultural labourers, as a category of the workforce, along with the most rural of counties, continued to exhibit relatively high fertility rates in Edwardian England and Wales even into the interwar years.⁹⁸ Nevertheless, compared with the virtually obsessive attention that has been devoted over many decades to debating the meaning of putative social class differentials in fertility change, there has been remarkably little systematic research aimed at elucidating whether towns and cities may have exhibited distinct fertility regimes.⁹⁹ However, both of the two most recent research studies of falling fertility in England and Wales have concluded by pointing towards the probable significance of an individual urban community's socio-economic, political and cultural character and history as a major and distinctive influence.¹⁰⁰ But neither these two, nor any other study of England and Wales, has had access to a sufficient quantity of high-quality data on the individual families living in different towns to be able to pursue these hypotheses with definitive rigour. It seems unlikely that this will be possible before the year 2012, when all the

Footnote 95 (cont.)

of private means and in the mill towns of the textiles industry: *FMR, Pt 2*, pp. cxi–cxiii; J. A. Banks, *Victorian Values, Secularism and the Size of Families* (London, 1981), p. 40. There are also signs that some southern rural populations may have controlled fertility when times were hard after the enactment of the New Poor Law in 1834: B. Reay, 'Before the transition: fertility in English villages 1800–1880', *Continuity and Change*, 9 (1994), 91–120.

⁹⁶ E. Shorter, J. Knodel and E. van de Walle, 'The decline of non-marital fertility in Europe, 1880–1940', *Population Studies*, 25 (1971), 375–93.

⁹⁷ M. S. Teitelbaum, *The British Fertility Decline: Demographic Transition in the Crucible of the Industrial Revolution* (Princeton, 1984) p. 151, table 6.10a; M. Flinn et al., *Scottish Population History from the 17th Century to the 1930s* (Cambridge, 1977), pp. 349–67.

⁹⁸ *Report of the Royal Commission on Population*, Cmd 7695 (PP 1948–9 XIX), para. 96.

⁹⁹ For an extended critique of the intellectually impoverishing limitations of the class-differential model of fertility decline, see S. Szreter, *Fertility, Class and Gender in Britain, 1860–1940* (Cambridge, 1996), *passim*.

¹⁰⁰ *Ibid.*, pp. 546–58; Garrett, Reid, Schurer and Szreter, *Changing Family Size*, chs. 4–7.

Urban fertility and mortality patterns

original detailed evidence from the 1911 fertility census of Great Britain will finally become publicly available for academic research.

Nevertheless, there is a certain amount of relevant detailed information currently available on the differential fertility and nuptiality characteristics of towns in England and Wales during this period of falling fertility. This comes from a large table compiled by T. H. C. Stevenson, the General Register Office's (GRO) chief medical statistician who was the moving force behind the 1911 census's *fertility inquiry*. This table shows the average number of children ever born and surviving to all married couples, where the wife was still under age forty-five in 1911, in each county borough and each urban district in England and Wales, including London's boroughs.¹⁰¹ Table 20.6 is derived from this source and is therefore able to give a range of fertility, nuptiality and related indices for the principal, distinct, self-governing urban communities of England and Wales as they existed in 1911, listed in order by their respective regions and counties.¹⁰²

The first and most obvious point to emerge from this tabulation is that the evidence flatly contradicts any strong or simple version of the hypothesis that 'urbanisation' was the primary cause of falling or low fertility, in the sense that there is no direct correlation between the size of a town or urban district in 1911 and the relative marital fertility level. Thus, although it is true that in general rural areas remained with higher marital fertility for longer than most urban areas, Table 20.6 indicates that a considerable number of urban communities exhibited fertility levels as high as or higher than the rural sections of many counties. This was notably true of towns in the North-East (Gateshead, South Shields, Sunderland, West Hartlepool, Newcastle, Middlesbrough), in Lancashire (St Helens, Warrington, Wigan), in the Black Country (West Bromwich, Walsall, Dudley, Wolverhampton) and in South Wales (Merthyr Tydfil, Aberdare, Rhondda). These were all primarily involved in the iron and steel, metalworking, heavy engineering or shipbuilding, and coal-mining industries. Thus, although fertility reduction tended to occur earliest in some urban communities, there remained in 1911 enormous variation between different towns in their fertility and nuptiality behaviour. The specific economic and industrial character of an urban community seems to have had quite a powerful influence, at least in discriminating between these high-fertility towns and the rest, regardless of size or regional, cultural considerations. Hence, the above examples and hence, also, the fact that Barnsley, the coal-mining centre of West Yorkshire, was the only urban centre east of the Pennines with very high fertility in 1911.

¹⁰¹ *FMR*, Pt 2, table 44, pp. 172–216, 'England and Wales – Marriages where the wife not attained the age of 45 years at census – Married couples, children born, and children dead, classified by area of enumeration, duration of marriage, and age of wife at marriage'.

¹⁰² These data are derived from a database constructed by Garrett, Reid, Schurer and Szreter, *Changing Family Size*. We wish to record our thanks to Eilidh Garrett for providing the tabulations presented here in Table 20.5.

Table 20.6 *Urban multiparity and marital fertility in England and Wales 1871-1911*

Census division	Place	Pop. 1911	Standardised fertility	Mar.	Celib.	N 20-4	Av. par. N 25-9	Mar. duration 5-9 years			Sex ratio 20-39	
								Av. par. 25-9 per 100 20-4	25-9	20-4 par.		
	Great towns		4.52									
	Other urban areas		4.44									
	Rural areas		4.67									
	ENGLAND		4.49									
	WALES		5.00									
												4.52
ENGLAND AND WALES												
London	LONDON	4,521,685	4.39	33.5	18.8	66,994	2.40	35,035	1.92	57	0.80	84
South-East	READING	75,198	4.06	41.0	15.8	998	2.25	751	1.91	75	0.85	91
	BOURNEMOUTH	78,674	3.59	42.1	34.7	786	2.11	653	1.79	83	0.85	54
	PORTSMOUTH	231,141	3.94	36.7	15.1	3,010	2.14	1,817	1.84	60	0.86	108
	SOUTHAMPTON	119,012	4.13	33.8	13.9	1,508	2.29	911	1.84	60	0.80	91
	CANTERBURY	24,626	4.28	36.6	19.0	279	2.34	181	1.96	65	0.84	91
	GILLINGHAM	52,252	3.67	35.8	7.3	711	2.07	441	1.82	62	0.88	148
	CROYDON	169,551	4.10	41.1	21.0	2,416	2.23	1,846	1.89	76	0.85	77
	WIMBLEDON	54,966	3.97	42.1	22.7	711	2.19	612	1.76	86	0.81	68
	BRIGHTON	131,237	3.97	37.8	24.4	1,545	2.19	1,035	1.75	67	0.80	73
	EASTBOURNE	52,542	3.62	41.7	32.7	556	2.07	417	1.80	75	0.87	59
	HASTINGS	61,145	3.86	38.6	33.9	554	2.23	438	1.79	79	0.80	62
South-West	EXETER	48,664	4.05	40.9	19.7	578	2.35	400	1.69	69	0.72	79
	PLYMOUTH	112,030	4.00	33.8	16.7	1,437	2.11	802	1.79	56	0.85	82
	BATH CITY	50,721	3.84	41	32.6	496	2.33	396	1.71	80	0.73	63

SWINDON	50,751	4.03	41.3	6.8	732	2.18	594	1.94	81	0.89	103
South Midlands											
ACTON	57,497	4.29	40.3	17.9	914	2.29	603	1.82	66	0.80	83
EALING	61,222	3.84	46.9	28.0	852	2.14	766	1.84	90	0.86	64
EDMONTON	64,797	5.04	28.8	7.6	976	2.61	501	2.14	51	0.82	94
ENFIELD	56,338	4.44	34.0	11.9	771	2.45	535	2.10	69	0.86	90
HORNSEY	84,592	3.33	46.0	25.4	910	1.98	931	1.71	102	0.86	67
TOTTENHAM	137,418	4.49	35.0	11.2	2,207	2.38	1,344	1.96	61	0.82	91
WILLESDEN	154,214	4.19	40.2	15.8	2,375	2.30	1,795	1.86	76	0.81	84
NORTHAMPTON	90,064	4.03	34.3	14.1	1,209	2.17	788	1.68	65	0.78	88
OXFORD CITY	53,048	4.09	45.6	27.3	598	2.27	493	1.89	82	0.83	73
East Anglia											
EAST HAM	133,487	4.49	33.9	7.2	2,061	2.40	1,333	2.00	65	0.84	90
ILFORD	78,188	3.77	42.2	17.5	1,115	2.18	1,021	1.76	92	0.81	79
LEYTON	124,735	4.28	38.9	13.1	1,947	2.30	1,324	1.96	68	0.85	86
SOUTHEND ON SEA	62,713	3.54	35.5	22.1	876	2.09	602	1.72	69	0.82	71
WALTHAMSTOW	124,580	4.57	32.0	7.9	1,992	2.46	1,179	2.16	59	0.88	91
WEST HAM	289,030	5.09	27.5	7.6	4,368	2.63	1,988	2.23	46	0.85	94
YARMOUTH	55,905	4.55	31.4	17.7	667	2.48	384	2.06	58	0.83	77
NORWICH CITY	121,478	4.63	32.7	17.7	1,629	2.51	915	1.93	56	0.77	81
IPSWICH	73,932	4.47	37.2	17.8	1,018	2.43	659	1.88	65	0.77	88
West Midlands											
BRISTOL	357,048	4.31	35.3	16.7	4,777	2.32	3,038	1.90	64	0.82	78
GLOUCESTER CITY	50,035	4.38	34.3	14.6	637	2.44	400	1.88	63	0.77	86
BURTON-ON-TRENT	48,266	4.33	37.4	10.2	661	2.38	464	1.80	70	0.75	101
SMETHWICK	70,694	4.65	31.7	8.5	1,109	2.44	630	1.97	57	0.81	95
STOKE-ON-TRENT	234,534	5.04	26.7	8.6	3,771	2.73	1,652	2.10	44	0.77	94
WALSALL	92,115	4.94	28.1	9.8	1,377	2.67	654	2.09	47	0.78	93
WEST BROMWICH	68,332	5.14	28.9	10.1	1,085	2.66	494	2.10	46	0.79	100
WOLVERHAMPTON	95,328	4.69	33.6	12.2	1,337	2.50	784	2.07	59	0.83	94
BIRMINGHAM CITY	525,833	4.62	30.4	12.1	8,133	2.50	4,149	2.02	51	0.81	90
COVENTRY CITY	106,349	4.03	33.4	11.2	1,967	2.20	1,038	1.91	53	0.87	114
DUDLEY	51,079	5.13	23.2	8.5	777	2.64	349	2.17	45	0.82	96
WORCESTER CITY	47,982	4.20	36.3	16.4	633	2.41	383	1.91	61	0.79	81

Table 20.6 (cont.)

Census division	Place	Standardised			Mar. duration 5-9 years						Sex ratio 20-39		
		Pop. 1911	fertility	Mar.	Celib. N	Av. par. N 20-4	Av. par. N 25-9	Av. par. 25-9 per 100 20-4	25-9 par./20-4 par.				
North Midlands	DERBY	123,410	4.06	32.6	12.5	1,861	2.30	1,085	1.88	58	0.82	91	
	LEICESTER CITY	227,222	4.19	34.1	14.3	3,345	2.27	2,024	1.74	61	0.77	81	
	GRIMSBY	74,659	4.28	30.6	8.8	1,047	2.27	507	1.89	48	0.84	103	
	LINCOLN CITY	57,285	3.74	37.0	14.5	868	2.17	525	1.83	60	0.84	102	
	NOTTINGHAM CITY	259,904	4.19	31.3	15.8	3,922	2.32	1,974	1.80	50	0.78	81	
Yorkshire	YORK CITY	82,282	4.42	37.7	16.1	1,033	2.38	762	1.98	74	0.83	95	
	HULL	277,991	4.58	28.3	10.9	3,970	2.49	1,943	2.07	49	0.83	93	
	MIDDLESBROUGH	104,767	4.94	29.1	8.3	1,626	2.66	827	2.18	51	0.82	108	
	BARNSLEY	50,614	5.00	28.7	11.7	832	2.63	373	2.15	45	0.82	104	
	BRADFORD CITY	288,458	3.66	39.3	17.1	3,952	1.97	2,999	1.58	76	0.80	83	
	DEWSBURY	53,351	3.89	38.0	15.0	710	2.18	550	1.64	77	0.75	88	
	HALIFAX	101,553	3.62	41.5	18.3	1,219	2.04	1,075	1.57	88	0.77	80	
	HUDDERSFIELD	107,821	3.83	45.5	17.6	1,417	2.17	1,282	1.65	90	0.76	85	
	LEEDS	445,550	4.28	34.9	12.8	6,266	2.30	4,012	1.83	64	0.79	86	
	ROTHERHAM	62,483	4.65	27.3	8.1	1,022	2.52	463	1.95	45	0.78	111	
	SHEFFIELD	454,632	4.39	28.3	10.3	7,551	2.43	3,655	1.90	48	0.78	98	
	WAKEFIELD	51,511	4.28	34.4	13.8	725	2.29	449	1.86	62	0.81	103	
	Lancashire-Cheshire	BIRKENHEAD	130,794	4.91	34.5	16.6	1,681	2.73	1,058	2.22	63	0.81	92
		CHESTER	39,028	4.68	33.6	18.6	487	2.55	287	2.68	59	0.82	87
		STOCKPORT	108,682	4.38	37.5	15.7	1,619	2.16	1,116	1.82	69	0.84	86
WALLASEY		78,504	4.11	41.5	19.6	1,008	2.31	799	1.89	79	0.82	74	
BARROW-IN-FURNESS		63,770	4.65	34.3	6.6	976	2.43	591	2.01	61	0.83	114	

BLACKBURN	133,052	4.14	38.5	17.4	1,932	2.23	1,290	1.73	67	0.78	81
BLACKPOOL	58,371	3.59	35.6	24.0	697	2.12	473	1.73	68	0.82	70
BOLTON	180,851	4.50	39.3	15.5	2,370	2.34	1,812	1.86	76	0.80	84
BOOTLE	69,876	5.02	30.1	9.5	846	2.74	485	2.37	57	0.87	93
BURNLEY	106,322	4.15	33.0	13.2	1,766	2.21	942	1.65	55	0.75	85
BURY	58,648	3.85	41.1	19.7	799	2.07	636	1.59	80	0.77	87
LIVERPOOL CITY	746,421	5.05	31.4	14.1	9,551	2.76	5,411	2.26	57	0.82	87
MANCHESTER CITY	714,333	4.49	35.4	14.6	10,619	2.39	6,633	1.92	62	0.80	90
OLDHAM	147,483	4.08	35.8	13.8	2,226	2.09	1,408	1.68	63	0.80	91
PRESTON	117,688	4.79	38.1	18.6	1,555	2.51	1,077	2.05	69	0.82	81
ROCHDALE	91,428	3.90	39.3	17.0	1,384	2.03	979	1.64	71	0.81	86
SALFORD	231,357	4.73	33.7	12.8	3,603	2.52	2,027	1.98	56	0.79	92
SOUTHPORT	51,643	3.80	43.0	33.5	512	2.08	467	1.71	91	0.82	60
ST HELENS	96,551	5.60	25.5	8.7	1,442	2.88	608	2.31	42	0.80	116
WARRINGTON	72,166	5.11	26.4	8.8	1,096	2.68	495	2.24	45	0.84	104
WIGAN	89,152	5.53	29.7	12.4	1,290	2.77	622	2.32	48	0.84	95
North											
DARLINGTON	55,631	4.42	35.5	13.8	841	2.46	499	2.01	59	0.82	90
GATESHEAD	116,917	5.12	27.6	9.8	1,657	2.75	1,657	2.75	100	1.00	97
SOUTH SHIELDS	108,647	5.04	23.2	8.0	1,433	2.68	590	2.18	41	0.81	92
STOCKTON ON TEES	52,154	4.90	31.3	8.8	761	2.65	399	2.25	52	0.85	100
SUNDERLAND	151,159	5.15	26.8	10.8	2,124	2.72	975	2.29	46	0.84	87
WEST HARTLEPOOL	63,923	5.10	28.9	6.8	904	2.69	460	2.11	51	0.78	94
NEWCASTLE-UPON-TYNE	266,603	4.81	30.8	11.7	3,570	2.62	2,019	2.09	57	0.80	94
TYNEMOUTH	58,816		29.6	12.2	770	2.74	387	2.25	50	0.82	91
Wales											
ABERDARE	50,830	5.05	27.7	6.5	776	2.61	366	2.38	47	0.91	117
CARDIFF CITY	182,259	4.47	31.4	9.1	2,418	2.42	1,307	2.06	54	0.85	95
MERTHYR TYDFIL	80,990	5.22	27.4	7.5	1,194	2.74	569	2.25	48	0.82	124
RHONDDA	152,781	5.32	26.6	2.9	2,446	2.75	1,026	2.40	42	0.87	139
SWANSEA	114,663	4.77	33.3	11.3	1,702	2.54	900	2.03	53	0.80	106
NEWPORT	83,691	4.78	32.5	9.4	1,177	2.56	649	2.07	55	0.81	103

Table 20.6 (*cont.*)

Explanatory notes

1. In Table 20.6 the name of each town is listed in order according to region and county. Its name is followed by its population size in 1911.
2. The column headed 'Standardised fertility' gives for each town a single, comparable measure of the marital fertility (the average number of live births experienced) of a single *birth cohort* of women, originally born between 1871 and 1880, who were living in each town at the 1911 census (the figure is truly comparable across towns because it has been standardised for the differing proportions of women in each town who married at each of three different ages: 15-19, 20-4, 25-9).
3. For this same birth cohort of women, born 1871-80 and marrying under age 30, the next column, 'Mar.', gives the percentage who married at age 25-9: a measure of the tendency to postpone marriage among this cohort. The adjacent column 'Celib.' gives a further measure of marriage postponement: the percentage of women never married in 1911 at age 45-9.
4. The six columns grouped together under the sub-heading 'Mar. duration 5-9 years' give fertility information for a further, distinct *marriage cohort*: those women married between 1901 and 1905. The first two columns give the number of women married at age 20-4 (N 20-4) and their average fertility after just 7.5 years of marriage (Av. par. 20-4). The second two columns give the same information for those women married at age 25-9. The fifth column gives the number marrying at 25-9 expressed as a percentage of the number marrying at 20-4, showing the extent to which marriage was delayed above age 24 in each town among this second, Edwardian marriage cohort.
5. The last of these six columns expresses the fertility (average parity) of the later-marrying couples (female age at marriage 25-9) as a percentage (a decimal fraction) of the younger-marrying (age 20-4). Wherever this produces a value below 0.95 in the column '25-9 par./20-4 par.', this indicates that births over the first 7.5 years of marriage were being restricted to an even greater extent by those marrying relatively late (above 25 years old) than by those marrying younger (under age 25).
6. The final column of Table 20.6 gives the sex ratio in 1911 of persons aged 20-39 years in each town. This gives a measure of the relative gendering of the labour market in each town.

Source: FMR, Pt 2, table 44.

These high-fertility towns were those in which the principal employment opportunities were confined to a particular set of industries where an almost exclusively male workforce had been established during the course of the nineteenth century (often the result of a three-way process of male negotiation – between the representatives of labour, employers and the state).¹⁰³ There was very little for young women of the proletarian class to do in these communities, either to support themselves or to contribute to their parents' budget. Consequently, they either married relatively young, with financial dependence on an earning husband being their principal alternative to dependence on their father and brothers, or they left for work elsewhere. This is reflected in Table 20.6 both in the relatively young female marriage age indices of these towns (typically less than 60 marriages at age twenty-five to twenty-nine per 100 marriages at age twenty to twenty-four) and in the unusually male sex ratios.¹⁰⁴ The sex imbalance towards males was also the product of the reciprocal effect of an influx of young men looking for the work that was available. For those women who did not choose to leave these communities, marriage and childrearing was the principal role available.

With mothering such an important source of social identity to women in these towns, it is less surprising that there would be little initiative towards its restraint. In these kinds of towns fertility did not begin to fall until proletarian parents, particularly fathers, had been gradually forced into a re-evaluation of the economic and emotional 'costs' of childrearing during the period 1870–1930. This occurred as a result of the ever-increasing determination on the part of the philanthropic middle-class urban missionary, charity workers and the state to impose upon the working classes an ever-accumulating burden of duties and obligations in respect of childrearing.¹⁰⁵ This included compulsory but paid-for (until the mid-1890s) schooling; and the range of measures implemented by the gathering momentum of the successive infant, child and, ultimately, maternal welfare movements across this period, culminating in the first decade of the new century when preoccupations with 'National Efficiency' came to the fore.¹⁰⁶

¹⁰³ S. Walby, *Patriarchy at Work* (Cambridge, 1986), ch. 5; E. Jordan, 'The exclusion of women from industry in nineteenth-century Britain', *Comparative Studies in Society and History*, 31 (1989), 273–96.

¹⁰⁴ Note that because of the higher mortality of males the average sex ratio at these ages was somewhat below 100; hence towns with ratios of about 95 and above, although not reflecting an absolute imbalance in favour of males, indicate a relative male surplus.

¹⁰⁵ For full details, see Szreter, *Fertility, Class and Gender*, pp. 513–25. For relevant evidence, see G. K. Behlmer, *Child Abuse and Moral Reform in England 1870–1908* (Stanford, 1908); R. Cooter, ed., *In the Name of the Child* (London, 1992); H. Hendrick, *Child Welfare* (London, 1994); G. K. Behlmer, *Friends of the Family* (Stanford, 1998).

¹⁰⁶ J. S. Hurt, *Elementary Schooling and the Working Classes, 1860–1918* (London, 1979); J. Donzelot, *The Policing of Families* (New York 1979); J. Lewis, *The Politics of Motherhood* (London, 1980); D. Dwork, *War is Good for Babies and Other Young Children* (London, 1987).

Fatherhood and masculinity remain a drastically underresearched topic especially for the nineteenth century. Its history is at present mainly traceable as the reciprocal reflection of the better documented social and legal history of mothering and motherhood. On the Victorian middle classes, a certain amount of work has identified considerable strains and stresses in this period, one which witnessed both the erection at mid-century of the reviled statutory monuments to the infamous 'double standard' of sexual morality, in the form of the 1857 Matrimonial Clauses Act and the 1864–6 Contagious Diseases Acts, but also their subsequent effective repeal in the 1880s.¹⁰⁷ For the working classes direct accounts of fatherhood remain anecdotal or indirect and there has been little attempt to provide a systematic account, still less an account which would distinguish the kinds of regional and industrial variations in fathering which are implied by the great local differences in fertility and nuptiality which are known to have existed.¹⁰⁸ Along with this goes a similar absence of systematic study of regional and local patterns of courtship, although, once again, the demographic record indicates that much local diversity will be found.¹⁰⁹

The reciprocal to the high fertility of the mining, heavy engineering, iron and steel towns can be found in many – though not quite all – of the low-fertility mill towns, either side of the Pennines in the Lancashire cotton and the West Yorkshire wool and worsted industries. They all exhibit, in the 'Mar.' column of Table 20.6, a significantly higher ratio of later female marriages (60–90 marriages at age twenty-five to twenty-nine per 100 marriages at age twenty to twenty-four) along with a strongly female sex ratio (final column, Table 20.6). Exceptionally low fertility is recorded among three of the four large Yorkshire wool towns: Halifax, Huddersfield and Bradford, with the fourth, the shoddy town of Dewsbury, not far behind. There is an evident contrast with the other, higher-fertility Yorkshire towns a few miles to the south, in the region where steel, engineering and coal were more significant industries (Wakefield,

¹⁰⁷ D. Roberts, 'The paterfamilias of the Victorian governing classes', in A. S. Wohl, ed., *The Victorian Family* (London, 1978), pp. 59–81; J. Tosh, 'Domesticity and manliness in the Victorian middle class: the family of Edward White Benson', in M. Roper and J. Tosh, eds., *Manful Assertions* (London, 1991), pp. 44–73; A. James Hammerton, *Cruelty and Companionship: Conflict in Nineteenth-Century Married Life* (London, 1992); J. Tosh, *A Man's Place* (New Haven, 1999).

¹⁰⁸ For some relevant material, see: N. Tomes, "'A torrent of abuse": crimes of violence between working-class men and women in London 1840–1875', *Journal of Social History*, 11 (1978), 328–45; J. R. Gillis, *For Better, for Worse: British Marriages, 1600 to the Present* (Oxford, 1985); L. Segal, 'Look back in anger: men in the fifties', in R. Chapman and J. Rutherford, eds., *Male Order: Unwrapping Masculinity* (London, 1988), pp. 69–96; and J. R. Gillis, *A World of their Own Making: A History of Myth and Ritual in Family Life* (Oxford, 1996), ch. 9.

¹⁰⁹ For some limited ethnographic observation on plebeian courtship in Edwardian Middlesbrough, see F. Bell, *At the Works* (London, 1907), pp. 178–81; on Lancashire see E. Roberts, *A Woman's Place* (Oxford, 1984), pp. 72–80; and A. Davies, *Leisure, Gender and Poverty* (Buckingham, 1992), chs. 4–5. See also S. Humphries, *A Secret World of Sex: Forbidden Fruit: The British Experience 1900–50* (London, 1988), chs. 3–4, 7.

Rotherham, Sheffield and especially Barnsley). In Lancashire, although also generally exhibiting relatively low fertility, the textile towns present a slightly more varied picture, with only Bury and Rochdale recording as low fertility as that found in the principal mill towns of the West Riding. Indeed, Preston's fertility – uniquely for a textile community – was much closer to that of the Yorkshire engineering and iron and steel towns mentioned above; and was actually higher than Barrow-in-Furness, the Lancashire shipbuilding centre.¹¹⁰

The only important exceptions to the analysis presented so far are found in the three Mersey and Wirral communities of Bootle, Birkenhead and Liverpool (the nation's second largest nineteenth-century city until it was surpassed by Glasgow in 1871). These three all exhibit very high fertility although they were not communities particularly dominated by mining or heavy industry. They demonstrate the capacity for a particular category of cultural or 'ethnic' influence, in the form of the substantial Irish Roman Catholic presence, also to have a highly significant influence upon the fertility characteristics of large urban communities.

It is, of course, no surprise that the human activity of genesis should have been profoundly influenced by people's religious beliefs and practices and this is a general finding which has been replicated by studies of falling fertility in many other countries, from the earliest work by W. H. Beveridge onwards.¹¹¹ As Michael Mason's fascinating study has carefully documented, the beginning of the period under consideration here – the 1840s – was the tail end of an era of several decades of quite widespread experimentation in gender and sexual roles and reproductive practices within British society. Much of this was mediated through the teachings and practices of the large number of religious and freethinking sects proliferating at that time, embracing a range of reproductive ideologies from consensual unions and 'free love' through to millenarian abstinence.¹¹² But by the last quarter of the nineteenth century, there seems to have

¹¹⁰ On the reasons for Preston's unusually high fertility for a textile town, see Szepter, *Fertility, Class and Gender*, pp. 511–12. The analysis there is derived from the superb, detailed monograph on Preston's social and labour history in this period by Mike Savage, *The Dynamics of Working-Class Politics* (Cambridge, 1987).

¹¹¹ W. H. Beveridge, 'The fall of fertility among the European races', *Economica*, 5 (1925), 10–27. For a more recent reprise of this theme in the context, again, of a European survey, see R. Lesthaeghe and C. Wilson, 'Modes of production, secularisation and the pace of the fertility decline in Western Europe, 1870–1930', ch. 6 in A. J. Coale and S. C. Watkins, eds., *The Decline of Fertility in Europe* (Princeton, 1986), pp. 261–92. See also J. Simons, 'Reproductive behaviour as religious practice', in C. Hohn and R. Mackensen, eds., *Determinants of Fertility Trends: Theories Re-Examined* (Liège, 1980), pp. 131–45. By far the most rigorous and extensive examination of the relationship between religious belief and fertility change in Britain is to be found in Banks, *Victorian Values*.

¹¹² M. Mason, *The Making of Victorian Sexual Attitudes* (Oxford, 1994); and on the gender and reproductive ideology and practices of the most important of these various experimental groups, the Owenite socialists, see Barbara Taylor, *Eve and the New Jerusalem: Socialism and Feminism in the Nineteenth Century* (London, 1983).

been a relative lack of marked differentiation between Protestant denominations in England and Wales on matters of sexuality and reproduction.¹¹³

However, it is evident, as the Mersey–Wirral cities illustrate, that religious affiliation continued to exert very substantial influence upon fertility behaviour where distinctions of both faith and ethnic identity were involved. The refugee Jewish community of east London certainly brought with it a highly distinctive family life and hygienic code of childrearing, which included both relatively high fertility and the achievement of very high survivorship rates in one of the country's harshest urban areas (there were also, of course, more modest Jewish trading communities of older settlement in Manchester, Leeds and Liverpool).¹¹⁴

The religious influence was clearly every bit as important, and on a much larger demographic scale, where Ireland was concerned. However, there were, of course, other very significant historical considerations, too. In particular, Ireland's high rates of migration and also her much delayed marriage patterns were both quite distinctive, the grim sequelae of the terrible famine. Nevertheless, once married, Irish rates of childbearing were relatively unrestrained until the interwar years and therefore much higher than in the rest of Great Britain in 1911. The religious influence is evident in the principal exceptions to this, in that lower fertility was already apparent before the Great War in the Protestant enclaves in Dublin, and in the three most urbanised Ulster counties, those containing and bordering Belfast (counties Antrim, Armagh and Down).¹¹⁵ However, with the evidence that is currently available, it is impossible in Ireland to disentangle the urban from the religious influence, in bringing about relatively low fertility in these places.

This combined religious and ethnic influence is also evident in the case of the Scottish nation, in that this distinctive Protestant population of Presbyterians was one which experienced a somewhat different and later fall in fertility than that

¹¹³ Although this remains a relatively unexplored subject from a demographic point of view. The most probable candidate for such an association on a significant scale in the late nineteenth century were the Secularists, a substantially urban movement which most closely represented the continuation of the Owenite inheritance. But it seems to have been as much associated with low-fertility textile towns, notably in the West Riding and in Lancashire, as with the high-fertility coal and heavy engineering communities of the North-East, or with, say, London, Leicester or Northampton, places noted neither for particularly low nor particularly high fertility. See E. Royle, *Radicals, Secularists and Republicans: Popular Freethought in Britain, 1866–1914* (Manchester, 1980), ch. 5; and Banks, *Victorian Values*, chs. 3–4. On freethinkers see also S. Budd, 'The loss of faith: reasons for unbelief among members of the secular movement in England, 1850–1950', *P&P*, 36 (1967), 106–25; and her *Varieties of Unbelief: Atheists and Agnostics in English Society, 1850–1960* (London, 1977).

¹¹⁴ On the Jewish family and working life in the East End, see Marks, *Model Mothers*; D. Feldman, *Englishmen and Jews* (London, 1994).

¹¹⁵ C. O'Gráda, *Ireland Before and After the Famine: Explorations in Economic History, 1800–1925* (Manchester, 1988), Appendix 7, pp. 168–9; and see C. O'Gráda, *Ireland: A New Economic History 1780–1939* (Oxford, 1994), pp. 218–24, which reports research showing differentially low fertility in the comfortable, middle-class Protestant Dublin suburb of Rathgar.

south of the border. Furthermore, the Scottish propensity to marry, although not as low as the Irish, was generally somewhat lower than that of the English and Welsh indicating an even more tightly restrained culture of sexual abstinence among the young.¹¹⁶ The most detailed data currently available, an analysis of marital fertility and nuptiality patterns for Scottish parishes during the period 1881–1911, show a complex and predominantly regional set of demographic regimes in Scotland, rather than a simple urban–rural differential.¹¹⁷ Certainly, marital fertility in 1901 was relatively low in the city of Edinburgh, in the more comfortable suburban parishes of Glasgow, in Dundee and in the relatively urban county of Fife (lying between Edinburgh and Dundee and containing Dunfermline). But fertility was equally low in the very rural south-eastern borders area (excluding the mining district of East Lothian) and also across a north-central Highland swathe stretching from Arran to Rannoch Moor.¹¹⁸ Scottish urban sex ratios during the nineteenth century varied in similar fashion to those of England and Wales, with female imbalances in most towns and strongest in the textile areas of Angus (Forfar), especially in ‘Jute-town’ (Dundee); while in the heavy industry Lowlands, including Glasgow, there was a relative (though not absolute) male imbalance, particularly due to Irish male in-migration to the coalfields.¹¹⁹

Scottish towns, therefore, like those of England and Wales, also exhibited substantial variations in their demography in a way that was related to their varying industrial and social structure. It is also the case that Lowland Scotland, embracing the principal urban populations, exhibited the characteristic ‘English’ demographic pattern of a culture of sexual restraint during the period of fertility decline. Unlike most other European populations, the initial decades during which fertility within marriage fell were also characterised by an increasing reluctance to undertake marriage.¹²⁰

As a result of the predominant influence of economic function and industrial character, quite extreme local geographical variations in urban fertility can be discerned in England and Wales from Table 20.6. The contrast between Barnsley and Huddersfield, just 15 miles (24 km) apart in South Yorkshire, was replicated on a similar scale over the same short distance between Wigan and Bury in south Lancashire. In England’s other two largest conurbations, the London metropolis and the West Midlands, extreme geographical variation in fertility between districts sitting cheek by jowl was also visible. The light industry centre of

¹¹⁶ Flinn *et al.*, *Scottish Population History*, pp. 335–48.

¹¹⁷ M. Anderson and D. J. Morse, ‘High fertility, high emigration, low nuptiality: adjustment processes in Scotland’s demographic experience, 1861–1914’, Parts 1 and II, *Population Studies*, 47 (1993), 5–25 and 319–43. ¹¹⁸ *Ibid.*, 16–21.

¹¹⁹ Flinn *et al.*, *Scottish Population History*, pp. 317–20.

¹²⁰ S. Szreter, ‘Falling fertilities and changing sexualities in Europe since c. 1850: a comparative survey of national demographic patterns’, in L. A. Hall, F. Eder and G. Heckma, eds., *Sexual Cultures in Europe*, vol. II: *Studies in Sexuality* (Manchester, 1999), pp. 159–94.

Coventry was only about 15 miles (24 km) from West Bromwich, a classic Black Country centre of heavy industry; and low fertility Hornsey in north London was only about 5 miles (8 km) from high-fertility Edmonton. In London's case, of course, these were differences due to the influences of social class relations, producing large-scale residential segregation between rich and poor, or 'suburbanisation' as H. J. Dyos and David Reeder defined it, rather than the more purely industrial distinctions which lay behind the wide variations in community fertility found in Lancashire, West Yorkshire and the West Midlands.¹²¹

A general reason for the relative absence of visibility of class differentials in that part of the data in Table 20.6 which is drawn from the towns in the North and the Midlands was the much slighter presence there of several important sections of the upper and middle classes. Outside the metropolis and the Home Counties, there was a much thinner spread of those of private means, the professional, administrative, commercial and financial elite and the army of domestic servants, household suppliers and supporting, lower-middle-class, clerical employees who worked and served alongside the diverse members of this upper middle class. This was not simply a case of an arithmetic absence of the metropolitan-style upper and middle class. There were also significant cultural implications for the social tone of the northern and Midland industrial, urban communities and for the manner in which their political and social relations were conducted.¹²² It was a smaller and differently formed middle class in most northern and Midland towns, composed much more of industrial employers and successful shopkeepers, often themselves nonconformist and risen from the local community within living memory. Of course, affluent suburbs inhabited by a professional and commercial elite like Sketty or Singleton Park in Swansea, Edgbaston or Handsworth in Birmingham, or Hallam in Sheffield, certainly contained localised residential concentrations of a more exclusive middle class, as did select districts of all other major cities, such as Manchester, Liverpool/Birkenhead, Leeds, Bradford and Newcastle/Gateshead. But these were relatively small enclaves by comparison with the widespread presence of this class in the imperial capital and the Home Counties. In the northern and Midland cities they were rather dwarfed by the enormous proletarian populations which the relatively labour-intensive industrial processes of Britain's world-serving staple industries had called into existence.

London was not the only urban centre in the South with a distinctive genteel tone. This was also true of many southern market, cathedral, county or resort towns, such as Bath, Oxford, Reading, Exeter, Bournemouth, Eastbourne or Brighton, and the growing residential communities of the early stockbroker belt,

¹²¹ Dyos and Reeder, 'Slums and suburbs'.

¹²² L. H. Lees, 'The study of social conflict in English industrial towns', *UHY* (1980), 34-43; R. J. Morris, 'Voluntary societies and British urban elites, 1780-1850: an analysis', *Historical Journal*, 26 (1983), 95-118; S. J. D. Green, 'In search of bourgeois civilisation: institutions and ideals in nineteenth-century Britain', *NHist.*, 28 (1992), 228-47.

Urban fertility and mortality patterns

which came to ring London during the period 1890–1930, such as Wimbledon, Pinner and ‘urban Surrey’. Here fertility was in general significantly lower than in the majority of northern towns (except, of course, those involved in textiles manufacture). A recent study has shown that, just as all the inhabitants of mill towns appear to have participated in the relatively low fertility of those directly working in the textiles industry, so, too, in these southern, more genteel towns and suburbs, even the wives of the proletarians who lived there seem to have married somewhat later and exhibited lower fertility than the wives of the same occupational categories of workers in northern and Midland industrial towns.¹²³

While it seems plausible to presume that this partly reflects some form of mimesis by the southern serving and labouring class of their social superiors, this does not seem likely to be the whole story in an age where open, public discussion of matters of sexuality and reproduction across the class divide was almost unheard of and was vigorously pursued in law when attempted, until Marie Stopes’ successful publication in 1918 of the nation’s first user-friendly marital sex manual, *Married Love*.¹²⁴ It seems equally probable that this was also an example of differences between the North and the South in terms of gendered labour market opportunities affecting parental roles and perceptions of the relative costs of childrearing.¹²⁵ With their consumer goods, distribution, clerical and domestic service industries, the much more middle-class southern towns provided a relatively wide range of employments for female proletarians, indicated by their more female sex ratios in Table 20.6. Levels of remuneration were modest in absolute terms but were relatively favourable because of the relatively low wage levels of many male working-class occupations in the South, at least until the interwar period when new industries, such as motor cars, aviation, radio and electronics, light industry and consumer durables increasingly tended to prefer location in the South and Midlands, away from the heartlands of organised labour and near the capital city, as the largest centre of dependable demand in an economy experiencing unemployment elsewhere.¹²⁶ Before that, factory industry in the South was more or less confined to agricultural machinery making and food-processing plants; and trade union activity was a rarity. A small town like Banbury was famous far and wide in the mid-nineteenth century as ‘the Manchester of the South’ because of its unusual radical politics, something which would have been quite unremarkable further north. In these rather different circumstances in the southern market towns and growing commuter suburbs, where there was more female access to a range of independent sources

¹²³ Garrett, Reid, Shurer and Szepter, *Population Change in Context*, chs. 4–5.

¹²⁴ M. Stopes, *Married Love: A New Contribution to the Solution of Sex Difficulties* (London, 1918).

¹²⁵ See Szepter, *Fertility, Class and Gender*, ch. 9, on perceived relative childrearing costs.

¹²⁶ E. H. Hunt, *Regional Wage Variations in Britain, 1850–1914* (Oxford, 1973). On the interwar economy, see the illuminating case study of the Slough trading estate by Mike Savage: ‘Trade unionism, sex segregation, and the state: women’s employment in “new” industries in inter-war Britain’, *Soc. Hist.*, 13 (1988), 209–29; and more generally see S. Glynn and A. Booth, *Modern Britain: An Economic and Social History* (London, 1996), chs. 2, 4.

of livelihood, young women from the poorer classes were able to marry somewhat later, were more likely to be able to continue to earn after marriage and were more likely to need to do so because of their husbands' relatively meagre incomes. All of these were practices associated with lower marital fertility.

It was, therefore, probably the varying labour market conditions and their implications in structuring proletarian gendered work and familial roles and parents' perceived relative costs of childrearing which primarily produced the marked regional patterns of urban fertility differential, between heavy and light industry, textiles and non-textiles towns in the North and the Midlands; and between the North and Midlands, on the one hand, and the South and South-East on the other hand. Thus, no towns in the South of England – not even the largest and most commercial ones, such as Norwich, Bristol or Southampton – exhibited fertility levels as high as the heavy industry and mining towns of the North and the Midlands. But on the other hand only a handful of resort and London dormitory towns in the South (Eastbourne, Gillingham, Bournemouth, Southend) recorded fertility levels as low as the principal wool towns of West Yorkshire. Furthermore, as Blackpool in Lancashire shows, the 'resort effect' on fertility was not confined to the south of the country, suggesting that it had more to do with the concentration of female employment opportunities, as in the textiles towns, than the presence of genteel patrons.

However, the case of the six towns of the Potteries (amalgamated as the borough of Stoke-on-Trent in 1910) shows that high levels of female employment did not invariably result in later marriage and low fertility. In this case detailed research has shown that family working practices in the Potteries' numerous bottle kilns were typically sufficiently flexible and near to home as to enable mothers, with the assistance of siblings, neighbours and a relatively plentiful supply of local relations, to combine work with effective domestic supervision, in a manner that was closer to home-working than to the practices of large, shift-working textile factories.¹²⁷ The net result, therefore, was that the perceived relative opportunity costs of childrearing (in terms of a trade-off against the mother's capacity to undertake gainful employment) were not so obvious in the six towns of the Potteries as in the mill towns.

In general, the Lancashire textiles industry's historic combination of relatively weak male unions (except certain branches of mule spinning), which had failed to exclude women and children from the factory workforce, resulted in low male wages, relatively high female earning capacity and so a powerful incentive on married couples not to produce so many young children so fast as to overstrain the cheaper and more informal childminding arrangements which were available (grandparents and other kin, neighbours and the community's elder daughters)

¹²⁷ See Szreter, *Fertility, Class and Gender*, pp. 497–9; the three most important studies of work and family in the potteries are J. Sarsby, *Missuses and Mouldnimmers: An Oral History of Women Pottery-Workers at Work and at Home* (Milton Keynes, 1988); R. Whipp, *Patterns of Labour* (London, 1990); and M. Dupree, *Family Structure in the Staffordshire Potteries, 1840–1880* (Oxford, 1995).

and so precipitate a wife's need to leave the factory before the eldest children could begin to earn their keep.¹²⁸ As mentioned above, in most Lancashire mill towns even though the capacity for women to offer labour in this way was primarily confined to the textiles industry, it was a sufficiently important component of the local labour market that the options which it provided seem to have had a more general cultural and demographic effect, resulting in later marriage and lower fertility than in other proletarian towns as a general feature of these communities.¹²⁹

It seems that the relationship between female employment and low fertility must have operated in a somewhat different way in the woollens industry, since there was remarkably little *married* female employment there, by comparison with the Lancashire mill towns. However, there was a great deal of *unmarried* female participation; and women postponed marriage even later in the West Yorkshire wool towns than in Lancashire and seem to have restrained their fertility, after marriage, to an even greater extent than in Lancashire. The general implication seems to be that in both West Yorkshire and Lancashire textiles towns the community of women tended to achieve a high degree of sexual bargaining power, apparently sufficiently acknowledged by their menfolk that family formation and the process of childrearing occurred more on their terms and on a basis of marked moderation by comparison with most other industrial communities.

The proximate explanation for the unusually pronounced fertility-restraining practices of the West Yorkshire towns may lie in their particularly assiduous application of the practices required by the traditional British culture of sexual abstinence. It has recently been argued that the long-standing mystery of the methods actually used by married couples, particularly proletarians, to control births throughout the period of falling fertility in Britain principally involved attempted abstinence, before the use of condoms became aesthetically and morally more acceptable, as well as affordable in the 1930s.¹³⁰ One of the

¹²⁸ M. Anderson, 'Household structure and the Industrial Revolution: mid-nineteenth century Preston in comparative perspective', in P. Laslett and R. Wall, eds., *Household and Family in Past Time* (Cambridge, 1972), pp. 215–35; see also R. Burr Litchfield, 'The family and the mill: cotton mill work, family work patterns and fertility in mid-Victorian Stockport', in Wohl, ed., *The Victorian Family* (1978), pp. 180–96; and E. Garrett, 'The trials of labour: motherhood versus employment in a nineteenth-century textile centre', *Continuity and Change*, 5 (1990), 121–54.

¹²⁹ T. H. C. Stevenson specifically tested for this in the original official analysis of the 1911 census data: *FMR*, Pt 2, p. cxvii.

¹³⁰ Szreter, *Fertility, Class and Gender*, ch. 8. From the beginning of the 1930s onwards appliance methods of contraception assumed a more acceptable form, price and availability. The key technical development was the latex process of rubber manufacture perfected for mass production in 1929. See J. Peel, 'The manufacture and retailing of contraceptives in England', *Population Studies*, 17 (1963), 113–25. It also happened that in the following year three principal official institutions of relevance, the BMA, the Anglican Church and the Ministry of Health, all reversed their long-standing formal prohibition on such forms of contraception, recognising its legitimacy in certain circumstances. See R. A. Soloway, *Birth Control and the Population Question in England 1877–1930* (Chapel Hill, 1982), chs. 11–14.

principal forms of evidence in favour of this thesis was the finding that within each of 200 occupational subdivisions of the nation distinguished in the official tabulations from the 1911 census, those who restrained fertility the most during the first five to ten years of their marriage were also those who had postponed marriage the most. In other words, those sections of the population wishing to avoid large families began by delaying their marriages to the greatest extent; and thereafter they produced a pattern of relatively infrequent births from the beginning of their marriages onwards. It was argued that these patterns are consistent with a popular culture lacking any widespread knowledge of a secure form of birth control and therefore resorting to the extension of the traditional British practices of delayed marriage, pre-marital sexual abstinence and additionally – the new feature of this period – systematic *post-marital* attempted abstinence (reduced coital frequency in marriage). As the figures in Table 20.6 in the columns headed '25–9 per 100 20–4' and '25–9 par./20–4 par.' show, the West Yorkshire wool towns exhibit among the strongest indices of this form of behaviour: the combination of late marriage and the particularly marked restraint of births from early in marriage among those marrying late. It may well be, therefore, that the culture of sexual abstinence was stronger in these West Yorkshire textile communities than anywhere else among the working classes. The possible local cultural reasons for this remain an open hypothesis for future research to evaluate.

By the end of the period under review here, children had everywhere in society come to be viewed by parents as a major responsibility and investment of time, energy and financial resources: Viviana Zelizer's 'priceless children'.¹³¹ Once the bottom fell out of the international coal market in the 1920s and mining communities had suffered their first serious wage cuts and unemployment in living memory, even these redoubts and cherished symbols of working-class virility and fertility had rapidly become communities of small families of just two or three children.¹³²

Indeed, by mid-century urban Britain appeared to be exhibiting a greater degree of socio-demographic uniformity than ever before, in terms of both its mortality and its fertility patterns. Furthermore, as F. M. L. Thompson has noted, by 1950 'urban' Britain embraced most of British society, in both cultural and residential terms.¹³³ Even if, as many have argued, this nation of gardeners, fishermen, ramblers and *The Archers* has always remained 'rural' in its emotional disposition, what was true of urban-dwelling Britain by the mid-

¹³¹ V. A. Zelizer, *Pricing the Priceless Child: The Changing Social Value of Children* (New York, 1985).

¹³² On birth control practices in interwar South Wales, see the important new oral history research by Kate Fisher: 'An oral history of birth control practice c. 1925–50. A study of Oxford and South Wales' (DPhil thesis, University of Oxford, 1997).

¹³³ F. M. L. Thompson, 'Town and city', in F. M. L. Thompson, ed., *Cambridge Social History of Britain, 1750–1950*, vol. 1: *Regions and Communities* (Cambridge, 1990), p. 2.

twentieth century was generally true of the British.¹³⁴ Michael Anderson has written of the emergence of a single 'modern' family life cycle in this post-industrial, mid-twentieth-century urban society, entailed by a much greater certainty and predictability of the *rites de passage*: the unlikelihood of premature death; the small variation in the number of children born; the consequent small and uniform kinship group; the ubiquity of a period of relatively comfortable retirement.¹³⁵

In all this the social and demographic consequences of the welfare state of course loom large. Steps were taken by the New Liberal administration at the end of the first decade of the twentieth century to ensure the family-supporting income of the nation's male breadwinners against loss through accident, illness or cyclical trade depression. This was ambitiously reconceived during the Second World War as a general social security system providing a range of services, free at point of use, direct to all members of the population, although retaining the notion of a contributory insurance principle. However, these measures were premised on a particular conception of the family and on a highly gendered model of the respective responsibilities of husbands for income earning and of mothers for child care, which reflected the assumptions of the middle-class male and female policy makers (such as Eleanor Rathbone) who campaigned for and implemented the central measures of the welfare state.¹³⁶

But it seems as significant to emphasise the continuation of considerable variety in family forms even during the mid-century decades of the twentieth century; and also to acknowledge the further change and diversity that has occurred since the consolidation of the welfare state in the 'post-war settlement', partly in spite of and partly because of the form of social security support which it has offered. The pioneering urban anthropology of Norman Dennis, Fernando Henriques and Clifford Slaughter, Michael Young and Peter Willmott, and Elizabeth Bott during the 1950s, along with the early social surveys of marriage and sexual practices by John England, Eustace Chessser and Geoffrey Gorer found evidence of profound differences in family life and intimate relationships between different sections of society.¹³⁷ It was found that

¹³⁴ Ralf Dahrendorf, *On Britain* (London, 1982); Patrick Wright, *On Living in an Old Country: The National Past in Contemporary Britain* (London, 1985).

¹³⁵ M. Anderson, 'The emergence of the modern life cycle in Britain', *Soc. Hist.*, 10 (1985), 69–87; see also P. Thane, *Old Age in England: Past Experience, Present Issues* (Oxford, 2000), chs. 14 and 20.

¹³⁶ J. Macnicol, 'Family allowances and less eligibility', in P. Thane, ed., *The Origins of British Social Policy* (London, 1978), 173–202; Lewis, *Politics of Motherhood*; S. Koven and S. Michel, 'Womanly duties, maternalist policies and the origins of welfare states in France, Germany, Great Britain and the United States, 1880–1920', *American Historical Review*, 95 (1990), 1076–108; S. Pedersen, *Family, Dependence and the Origins of the Welfare State* (Cambridge, 1993).

¹³⁷ N. Dennis, F. Henriques, and C. Slaughter, *Coal is Our Life* (London, 1956); M. Young and P. Willmott, *Family and Kinship in East London* (London, 1957); E. Bott, *Family and Social Network*

families in the traditional working-class areas of the North and the East Midlands where the long-declining staple industries still predominated, tended to live in more gendered communities, where husband and wife each had a separate network of same-sex close friends, including the same-sex members of their own respective families. This was also true of London's indigenous working class of the East End and other, old-established plebeian communities in the South. Despite having this in common, all these communities also differed culturally, as most obviously demonstrated by the profound regional and local variations of popular accent and even dialect which still persist to this day. By contrast the middle classes were found by these studies to exhibit a quite different and relatively uniform pattern of a closer conjugal relationship between husband and wife, sharing a similar set of friends of both sexes while living relatively independently of their respective parents, indeed often living in different parts of the country because of the geographical mobility required to pursue professional and managerial careers. The aspirant lower middle class and the more affluent working class provided further variants between these two poles. They typically lived in the distinct parts of the country that had seen the rising prosperity of new industries from the interwar years onwards: the West Midlands centre of automobile, metal alloy and general transport engineering, and the great swathe of consumer durable, light industry and communications services companies, much of which grew outwards in an arc from the North Circular road in the buoyant London-centred economy of the South-East.

Furthermore, belying this appearance of mid-century stability and uniformity, even during the 1940s and 1950s there was also a wider and more general sexual revolution brewing beneath the surface of British society. It exploded in the public arena as Flower Power in the late 1960s; but such an acute vital statistician as John Hajnal had long before noticed its herald sign as a new downward movement in the age at marriage from the late 1930s onwards.¹³⁸ This marked the beginnings of the end of the culture of abstinence; and of the centuries-old late marriage pattern, which Hajnal, himself, was the first to document.¹³⁹ In

Footnote 137 (*cont.*)

(London, 1957; 2nd edn, 1971); L. R. England, 'Little Kinsey: an outline of sex attitudes in Britain', *Public Opinion Quarterly*, 13 (1949), 587-600; E. Chesser, *The Sexual, Marital and Family Relationships of the English Woman* (London, 1956); G. Gorer, *Exploring English Character* (London, 1955); G. Gorer, *Sex and Marriage in England Today* (London, 1971). Note that more recent sociological research has argued, in critique of Bott's 'joint' versus 'segregated' typology, that there is significantly more complexity and variation to be found in marital relationships than this dichotomy implies: S. Edgell, *Middle-Class Couples: A Study of Segregation, Domination and Inequality in Marriage* (London, 1980); J. Atkinson, 'Gender roles in marriage and the family. A critique and some proposals', *Journal of Family Issues*, 8 (1987), 5-41.

¹³⁸ J. Hajnal, 'Age at marriage and proportions marrying', *Population Studies*, 7 (1953-4), 111-36.

¹³⁹ J. Hajnal, 'European marriage patterns in perspective', in D. V. Glass and D. E. C. Eversley, eds., *Population in History: Essays in Historical Demography* (London, 1965), pp. 101-43.

due course there has been such a downgrading of this long-standing British cultural practice, whereby the intention to marry was viewed as the gatekeeper of active sexuality, that typical age of female sexual initiation is now almost below the legal limit for marriage; while the state's need to recognise fiscally the status of 'cohabiting' couples as equivalent to marriages signifies how common it has become as a context for raising children.¹⁴⁰

Meanwhile, the enormous rise in single parenting, especially single mothers, whether voluntary or through desertion or separation, alongside the complex family forms and sibling relationships created by remarriages, in addition to the diversity of family forms among Britain's new immigrant groups of the mid-twentieth century, are all factors which continue to create an enormous range of variability in family sizes and structures.¹⁴¹ Although the fertility of individual women themselves may vary much less than in the past (in that, since the 1940s, the vast majority of women in the population have only experienced between zero and four births, whereas a century earlier one in six women were experiencing ten or more confinements), there is now as great a variety of family forms extant as ever.

The decades of the 1940s and 1950s, therefore, were no more than a temporary moment of relative uniformity in the nation's urban fertility and nuptiality patterns. This illusion was created by the fact that one set of dramatic changes, a long-term revolution in the perceived relative costs of childrearing, had spent itself as a force for secular fertility change; while its corollary and historical successor as a major dynamic for further socio-demographic and nuptiality change, the assertion of sexual autonomy on the part of this more highly valued younger generation in the context of a society guaranteeing a degree of minimal social security, was about to break upon the nation's cultural institutions with its full force. That this had not already become more widely manifest following the apparent thawing out of upper-middle-class sexual sensibilities in the 1920s was due to an unusual succession of subsequent sweeping historical events. The 1930s Depression, the Second World War, and the succeeding Cold War era of austerity, rationing and National Service, conspired to maintain for a further generation within popular culture a powerful set of countervailing values of parsimony, self-sacrifice, national insecurity, self-discipline and submission to traditional authority. As a result, attachment to the historic culture of late marriage and sexual abstinence was retained in this highly urban society for a further generation after the initial acceptance of contraceptive technology, until

¹⁴⁰ K. Wellings, J. Field, M. Johnson and J. Wadsworth, *Sexual Behaviour in Britain: The National Survey of Sexual Attitudes and Lifestyles* (Harmondsworth, 1994), pp. 37–9.

¹⁴¹ K. Kiernan, H. Land and J. Lewis, *Lone Motherhood in Twentieth-Century Britain: From Footnote to Front Page* (Oxford, 1998); I. Diamond and S. Clarke, 'Demographic patterns among Britain's ethnic groups', in H. Joshi, ed., *The Changing Population of Britain* (Oxford, 1989), pp. 177–98.

the liberalisation of public conventions and codes of sexual morality in the course of the late 1950s and 1960s.¹⁴²

(iv) CONCLUSIONS

The period 1840–1950 certainly witnessed great transformations in urban mortality, fertility and nuptiality. The dramatic downward falls in national aggregate levels of both mortality and fertility *c.* 1870–1930 have always attracted much attention; but these developments need to be seen as phases within a significantly more complex series of other highly significant demographic transformations both before and after. For instance, Britain's new industrial cities were already exhibiting great demographic novelty in the period 1750–1840 if the important issues raised by Allan Sharlin prove to be at least partially correct, as appears to be likely.¹⁴³

Sharlin addressed the observation, since time immemorial, that urban settlement had always functioned as a great demographic maw, devouring the flower of the countryside's youth like a Minotaur's labyrinth.¹⁴⁴ Sharlin argued that we need to recognise that early modern cities' chronic thirst for in-migrants was due not only to the migrants' high mortality, but also to their low fertility, due to the constrained marriage options which in-migrants frequently faced in an environment of unavoidably high living costs and relative scarcity of high-premium skills, a hypothesis that has now received some empirical support.¹⁴⁵ In the light of this perspective it could be said that the new kind of urban system thrown up in Britain by the industrial mechanisation of productive processes was already exhibiting novel demographic features during the late eighteenth and early nineteenth centuries because it was characterised by relatively high and rising nuptiality and fertility among its in-migrants.

However, there may have been little new in this period in Britain's industrial

¹⁴² On the wider ideological and cultural forces of liberalisation in the post-war decades, see J. Lewis and K. Kiernan, 'The boundaries between marriage, non-marriage, and parenthood: changes in behaviour and policy in postwar Britain', *Journal of Family History*, 21 (1996), 372–87; and for a study subscribing to a similar chronology through analysis of a very different genre of literature, the rise of soft-porn magazines, see Marcus Collins, 'The pornography of permissiveness: men's sexuality and women's emancipation in mid-twentieth-century Britain', *History Workshop Journal*, 46 (1998), 55–76.

¹⁴³ A. Sharlin, 'Natural decrease in early modern cities: a reconsideration', *PE&P*, 79 (1978), 126–38.

¹⁴⁴ For an influential estimate of this effect in relation to London, see E. A. Wrigley, 'A simple model of London's importance in the changing British society and economy, 1650–1750', *PE&P*, 37 (1967), 44–70.

¹⁴⁵ K. Lynch, 'The European marriage pattern in the cities: variations on a theme by Hajnal', *Journal of Family History*, 16 (1991), 79–96; J. de Vries, *European Urbanisation 1500–1800* (London, 1984), p. 190; C. Galley, 'A model of early modern urban demography', *Ec.HR*, 48 (1995), 448–69; S. King, 'Dying with style: infant death and its context in a rural township 1650–1830', *Social History of Medicine*, 10 (1997), 3–24.

cities with respect to the other side of the demographic equation, mortality. The beginning of the period reviewed here, the 1830s and 1840s may well have been the worst ever decades for life expectancy since the Black Death in the history of those parishes which were now experiencing industrialisation, whether they were a Glasgow or a Manchester, a Walsall or a Carlisle. These industrial settlements were teeming with young adults and their young broods, something never seen on this scale before in Britain's towns. But they were also overcrowded and insanitary, and succumbing to wave after wave of decimating diseases of filth and infection, the old story of high urban mortality.

In the face of this withering firepower there is clear evidence, in the national aggregate demographic record, that the apparently ever-increasing inclination of proletarians to marry each other at ever younger ages from 1750 until 1825 shuddered to a standstill and even went into retreat during the second quarter of the nineteenth century, when average age at marriage rapidly rose back to what it had been in the mid-eighteenth century. Almost certainly the insecurity of the trade cycle in this period, in the context of a central state dramatically reducing the social security and welfare provisions of the Old Poor Law, also contributed significantly to the marked flight from marriage during these two decades. Thus, when the subsequent sustained mid-Victorian revival of trading prosperity arrived, along with the cheaper food and therefore rising real wages for the urban workforce which the repeal of the corn laws was popularly believed to guarantee, proletarian marriage surged once again for a further quarter-century and, with it, the nation's and the cities' fertility.

Although there was some alleviation during the third quarter of the nineteenth century of the atrocious levels of urban mortality found in the industrial towns in the catastrophic second quarter, substantial and absolute improvements, above the levels of life expectancy found in the few towns for which we have reliable records for the last quarter of the eighteenth or first quarter of the nineteenth century, did not occur until the very last quarter of the nineteenth century. The urban mortality rates of elder children and young adults began to edge downward during the last three decades of the century, while those of infants did not decisively fall until the first three decades of the twentieth century, when they did improve remarkably quickly. Only at this point, with the eradication of most sanitation-related and infectious disease coming to be appreciated as a realistic aspiration, was it finally becoming apparent to contemporary medical and public opinion that preventive public health infrastructure, increasingly accurately guided by medical science, had succeeded in finding a safe way through the Minotaur's labyrinth, inaugurating an entirely new era in the relationship between high density urban settlement, health and mortality.

By contrast with this story of urban mortality finally emerging into a new era by the mid-twentieth century, from the perspective of the Sharlin thesis and *la longue durée* the twentieth century has, in a sense, seen the fertility of urban

society return to the customary pattern of restraint of past millennia, after a relatively brief period of excess and carefree abandon during the later eighteenth and the nineteenth centuries. This may seem a perversely paradoxical conclusion to draw in the face of over half a century of demographers' hailing the 'modern' fertility decline as *La révolution démographique*.¹⁴⁶ There has undoubtedly been a transformation, since the 1870s, in the degree of precise control over the timing and number of children born to urban-dwelling women and men; and in the social universality of the extent to which this control is exerted. But the historical record does seem to show that urban populations before the modern era were not especially fertile in the aggregate. Of course, this was partly the result of the involuntary winnowing of high infant and child mortality, and partly due to institutional limitation on access to marriage for important subsections of the population such as poor in-migrants and those apprenticed to trades. But it was also partly due to the same set of status and aspirational reasons which prevail among today's urban dwellers, acutely conscious of the trade-off between the need and desire to accumulate security and status-conferring material and cultural capital and the divinely ordained or natural imperative to burden themselves with 'hostages to fortune'.¹⁴⁷ This was how the highly urban, as well as urbane, Sir Francis Bacon presented the key considerations involved in contemplating marriage and its issue, over two and a half centuries before 'modern', post-industrial, urban society's 'révolution démographique'.

¹⁴⁶ A. Landry, *La révolution démographique* (Paris, 1934).

¹⁴⁷ This phrase is drawn from one of *The Essays*, Francis Bacon's famous aphoristic *Counsells, Civill and Morall*, three editions of which were published in his lifetime between 1597 and 1625. It is cited in Banks, *Victorian Values*, p. 47.