

SOCIALLY SELECTIVE MORTALITY DURING THE POPULATION CRISIS OF 1727–1730: EVIDENCE FROM LANCASHIRE

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Introduction

In the late years of the 1720s, parts of England were hit by one of the worst demographic crises in the early modern period. According to Wrigley and Schofield, mortality was extremely high across the Midlands, much of northern England, and parts of East Anglia.¹ In fact, their aggregate sample of parish registers suggests that, in terms of deviation from background levels of mortality, the years from 1727 to 1730 rank as the second worst crisis between 1541 and 1871, outdone only by the terrible epidemics of the 1550s.² Unfortunately, however, despite their coming at a time of increasing record availability, our knowledge of this very long-lasting and violent crisis is extremely patchy.³ The purpose of this article is to improve on this knowledge by offering both new regional detail to the existing picture, and fresh data on the social impact of the crisis. In particular, it tests the validity of three assertions made by contemporaries about the social selectivity of mortality, namely, that the relatively old were more likely to die, that the crisis was more severe in the countryside than the towns, and that its impact fell disproportionately on the poor.

The study area

This study focuses on the ancient county of Lancashire, which was apparently one of the worst affected parts of the country. The county itself, traditionally one of England's poorest, was in the early eighteenth century undergoing something of an economic transition as trade and industry developed in its southern reaches, although the northern hundreds of Amounderness and Lonsdale remained predominantly agricultural.⁴ Around Liverpool, itself a growing Atlantic port, metal-based industry was gaining a strong foothold and making use of an increasingly exploited local coalfield.⁵ Meanwhile, the older centre of Manchester was increasing in size and influence in tandem with local textile manufactures, which were also centred in towns such as Bolton, Bury, Rochdale, and Blackburn.⁶ Most impressively, the eighteenth century was to

see the spectacular growth of the region's cotton industry, and there are clear signs that the use of this fibre was beginning to transform south-east Lancashire's economic landscape well before the 1720s.⁷ In time, such developments would feed into impressive population growth, but the available evidence suggests that in 1727 this still lay largely in the future, although it seems that the population of the south-west of the county was already growing.⁸ By contrast, much of the rest of the region appears to have been at the very end of a long period of population stagnation that may have dated back as far as the reign of Charles I. In any case, the total population of the county can hardly have been much more than about 225,000 during the period in question, although this estimate can admittedly only rest on the most tentative of foundations.⁹

There is little indication, then, that the 1720s were a time of particularly intense demographic stress. It has been suggested that in the early and middle years of the seventeenth century the region underwent a 'Malthusian' crisis in which population outstripped available food resources.¹⁰ Indeed, it has long been accepted that the 1620s in particular saw widespread starvation in the region.¹¹ One hundred years later, however, such conditions appear to have eased significantly. Although the population of the county had increased by perhaps 50 per cent in the intervening years, growing industrial prosperity, improving integration with wider grain markets, and—perhaps most critically—wider commitment to welfare spending through the poor law, seem between them to have ensured such dramatic subsistence crises did not return.¹²

'Never so sickley a time known': the crisis in Lancashire

The 1720s crisis was not a famine, not in any straightforward sense anyway, but high food prices evidently played some role. The harvests of 1727 and 1728, particularly the latter, seem to have been especially poor, perhaps a result of the notably hot summers in those years, and the price statistics presented by Peter Bowden suggest that the 12 months following each of these harvests saw composite grain prices in the two years respectively 25 and 33 per cent above trend.¹³ Indeed, prices were so high that 1728 and 1729 both saw national imports of wheat exceed exports, the only years in which statistics show the net flow going this way between 1697 and 1757.¹⁴ We can add nuance to this picture by deploying local price data, and from these it appears that after the 1727 harvest prices were highest in the south of the county, while after 1728 they were extremely high across the whole region. According to William Stout of Lancaster, corn was 'scarce and dear' around Manchester and Liverpool after the 1727 harvest and, although there was 'great plenty' further north, trading with badly affected areas caused prices to rise there too.¹⁵ Things then got worse after the 1728 harvest, and Stout described 1729 as 'very dear for all provisions', necessitating imports from Hamburg and even America.¹⁶ In Little Crosby further south, Nicholas Blundell's diary and 'Anecdote Book' both broadly support Stout's picture, recording that in 1727 '[c]orne generally speaking proved small'.¹⁷ Then, in the following two years

corn was very scarce in Lancashire, as well as in other parts of

England. For which reason great quantities of corne was brought into Leverpoole and I am informed from very good hands that from June the 24 1728 to May the 6th 1729 there was import into Liverpool 234562 bushels of corne, chiefly wheat and barley.¹⁸

Finally, we can add data from farm stewards' accounts for Lytham Hall on the Ribble Estuary, which suggest high prices for wheat, barley, oats and potatoes in 1729, though not for the previous year.¹⁹ Certainly, then, this was a crisis which took place against the very real shadow of dearth.

On the other hand, it seems over-simplistic to describe this as the '1727-9 harvests crisis', as one historian has.²⁰ Though there is unassailable evidence for high prices, it is also clear that epidemic disease played the decisive role in causing mortality. Indeed, while there is an exceptionally large body of evidence describing the forms of sickness to which people succumbed, there is—as far as I am aware—no evidence of anybody dying from immediate hunger. This is in marked contrast to the famine of 1623, when the parish register of Greystoke (Cumberland) recorded deaths from starvation, and the late 1640s, when newsbooks complained of famine mortality in the far north-west, though in the latter case extant quantitative data suggest such reports were exaggerated.²¹ Thus, while we should not necessarily rule out a potential connection between dearth and mortality through either weakened immunity to disease or social factors (such as increased migration aiding the distribution of disease vectors) it does seem that the term 'harvests crisis' is insufficient.

That the most proximate cause of mortality was disease is attested by a large volume of contemporary comment. More specifically, it appears that there were two broad sets of illnesses present. Firstly, medical journals such as those of the Yorkshire physicians Clifton Wintringham and William Hillary describe the impact of remittent and intermittent fevers, sometimes accompanied by eruptions on the skin and psychological trauma.²² In the words of Wintringham, describing the fevers that hit York in the summer of 1727:

Skin eruptions often accompanied these diseases, sometimes of a dark colour, which were usually dry, but others full of transparent serum which, hanging from a scorbutic spot, tormented the sick with grievous itching... The sick who were affected at this time generally appeared somnolent and senseless, especially in paroxysms, and they were overcome by lassitude, debility and dullness of the spirits, which symptoms accompanied the approach of the putrid fever in an even greater degree. For the pulse in this was generally rapid and feeble with a dry and dark tongue; the urine was red and free from sediment...²³

These fevers were interpreted at the time as being of several different types, and it is exceptionally hard to be much more precise, but it has been suggested that typhus or something very similar was the chief culprit.²⁴ There were also serious winter outbreaks of inflammatory diseases and 'epidemical catarrhs'

which are usually thought to have been influenza. The outbreak of influenza in the latter months of 1729 seems to have been especially widespread, with Hillary writing of 'an Epidemical Cough' that 'seiz'd almost every body, few escaping, for it was universally felt over the Kingdom'.²⁵ There was also, in the later months of 1727, an epidemic 'horse-cold', recorded not just in Lancashire but also in Staffordshire, Shropshire, Devon and Ireland.²⁶

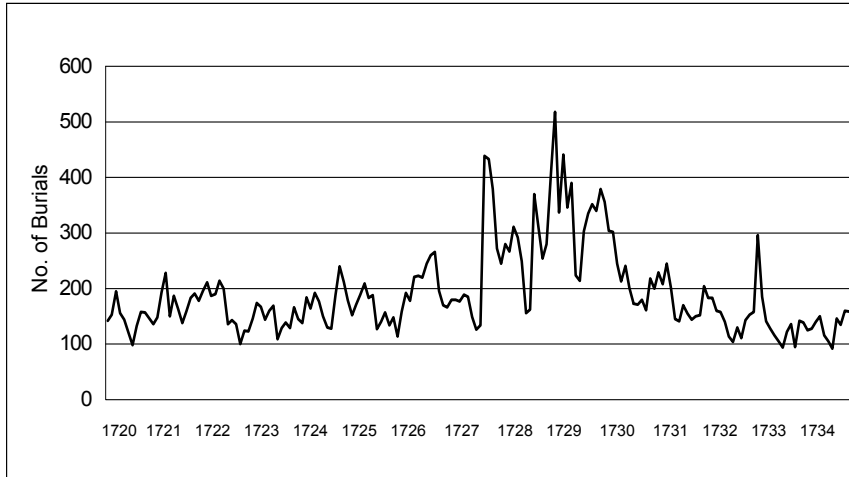
Evidence from Lancashire corroborates this picture, though in rather less detail. Nicholas Blundell lamented in 1727 that there was '[n]ever so sickley a time known in Lancashire as from May till the end of this year'.²⁷ 'Abundance died', he wrote, from 'an uncommon sort of a fever which eather took them off or ended in a violent ague which often lasted severall months & was scarce possible to be cuer'd'. William Stout, meanwhile, described 1728 as suffering a 'very sickley summer' in which '[t]he buryalls were double this year to what they were last year'.²⁸ At the same time the parish authorities of Deane (near Bolton) felt compelled to explain, through a series of notations, why their registers contained such an extraordinary number of burials.²⁹ Thus, according to an interjection for September 1727, those buried that month 'dyed of a fever. But in some respects the disorder resembled the plague, and continued amongst us above two years.' Subsequent entries referred to 'agues', 'fevers', and 'pluraisies'.

Such literary evidence is extremely useful, of course, but the clearest indication of the severity of the crisis comes from burial registers. A sample of 42 registers (all extant published registers plus the unpublished registers of Manchester and Bolton-le-Moors), covering roughly half of the county's population and representative of its major economic sub-regions, shows an exceptionally marked increase in the number of burials between August 1727 and the spring of 1730.³⁰ Taking the 36-month period from August 1727 to July 1730, the number of burials was roughly 90 per cent higher than we would expect from the mean annual total for the non-crisis periods between 1720 and 1735.

Assuming a population of around 225,000 and a normal death rate of 25 per 1000,³¹ this would mean that an extra 15,000 or more deaths *in Lancashire alone* are attributable to the epidemics. All told, this would represent the loss of an extra 6–7 per cent of the county's population, suggesting the crisis was marginally more severe than the famine of 1623, which is reckoned to have killed 5 per cent.³² The course of the crisis can be traced in Figure 1, which shows marked peaks in mortality in the late summer and autumn of 1727 and 1728, as well as in the winter of 1728/9 and 1729/30.

Before moving on, it is worth highlighting one geographical nuance to these statistics. Figure 2 shows the sample divided into two sub-groups, the one covering the northern hundreds of Lonsdale, Amounderness, and Blackburn, the other representing West Derby, Leyland, and Salford in the south. It is apparent from these that the crisis took two rather different paths in the two regions. In the south, an initial peak in burials in the late summer and autumn of 1727 was followed by a similar, albeit less severe, one 12 months later. These

Figure 1 Monthly burial totals in 42 Lancashire registers, 1720–1734



Source: 42 burial registers (see note 30).

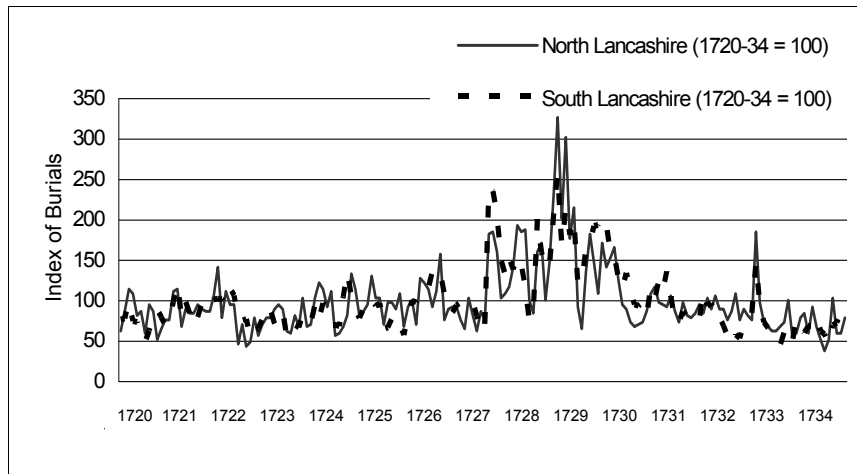
peaks were associated with the relapsing, remitting, and spotted fevers mentioned above, and probably thus represented the human cost of typhus or similar fevers. Finally, high mortality was recorded in both the winter of 1728/9 and 1729/30, the latter coinciding with the epidemic reported by William Hillary and many others. By contrast, in the north the mortality peak was largely confined to the winter of 1728/9, with much smaller spikes at the other times, although the whole period was characterised by generally high numbers of burials in both north and south.

These figures represent the total impact of the crisis on the Lancashire population, at least within our sample parishes. However, one of the more interesting aspects of the extant commentaries on the epidemics is the willingness of their authors to suggest a certain degree of social selectivity in mortality. The remainder of this article will use burial registers to assess whether this selectivity can be quantified, looking in particular at three claims: that mortality was especially severe among the old, that the crisis was worse in the countryside than the towns, and that the poor were disproportionately affected.

A socially selective crisis?

According to Nicholas Blundell, it was 'generally those above 50 years old' who died in the mortality peak of 1727.³³ In the absence of details of the age of those buried in the county's registers it is impossible to test this assertion as fully as one would like. On the other hand, data from the Staffordshire parish of Trentham, which *does* record age at death, suggest that the idea contains some demonstrable truth.³⁴ In this parish between April 1722 and July 1727,

Figure 2 Indexed burials in Lancashire sample, 1720–1734

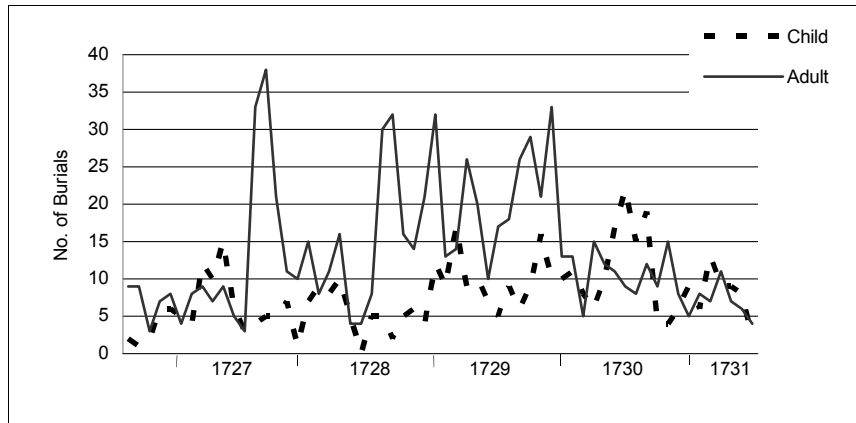


Source: 42 burial registers (see note 30).

and then from August 1730 to July 1732, 44 per cent of those buried were recorded as 50 years or older, whereas the equivalent figure for the three years from August 1727 to July 1730 was 53 per cent. Moreover, the average age at death of those buried during the crisis period was 44.3 years; that for the remainder of the period was 38.0 years. The closest we can get to replicating this test in Lancashire is to infer age from the occasions in which the decedent is recorded as a 'son' or 'daughter', thus suggesting that they were a minor. What this means in real terms is unclear, though it seems likely that it represents economic dependence on the child's parents rather than a fixed age. Nonetheless, the quantification of such burials should give us a useful proxy for the burial of children as against adults, and this approach has been used to good effect by Appleby to argue for the presence of typhus (which tended to kill more adults than children) in Cumberland and Westmorland during the mortality crisis of 1587–1588.³⁵ For our purposes, the burials in a sample of five large parishes, again representative of Lancashire's economic geography (Bolton-le-Moors, Manchester, Garstang, Prescott, and Sefton), have been quantified under separate headings for 'children' and 'adults' (Figures 3 to 5).³⁶ Of course, we have no way of knowing which burials during the crisis years resulted directly from the epidemic and which of them simply represented background mortality, and hence we might expect any marked social selectivity in the incidence of mortality to be flattened by the unavoidable incidence of non-crisis burials in our sample.

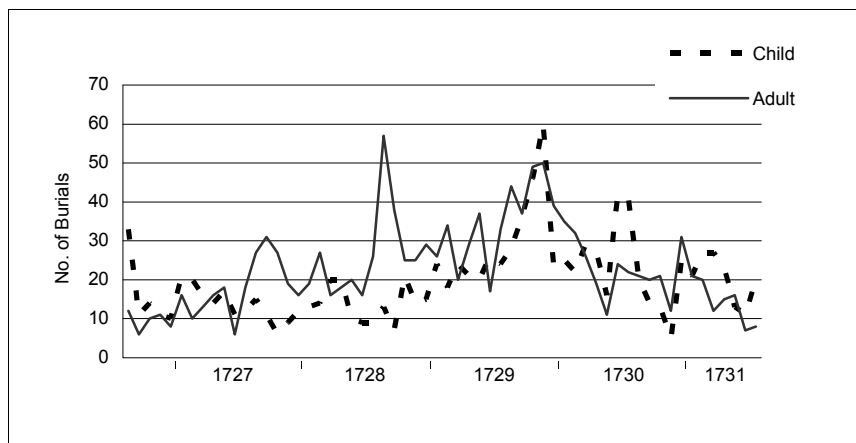
The data presented are not without ambiguity. Certainly the crisis appears to have been partially driven by an increase in the number of adults buried. There are also some particularly prominent 'spikes' which seem to have been driven

Figure 3 'Adult' and 'child' burials in Bolton-le-Moors parish, 1726–1731



Source: Bolton-le-Moors parish registers.

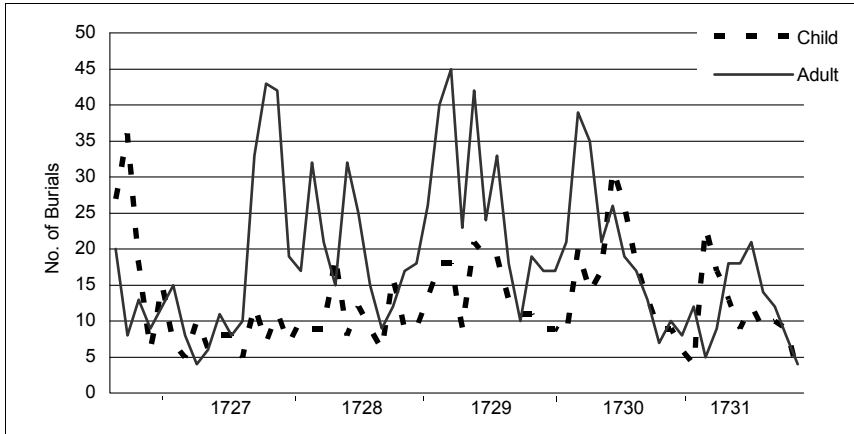
Figure 4 'Adult' and 'child' burials in Manchester, 1726–1731



Source: Manchester parish register.

by an increase in adult burials, such as the autumn mortality peaks in 1727 (Garstang, Prescott and Sefton, and Bolton-le-Moors) and 1728 (Bolton-le-Moors and Manchester). This seems to have been marginally less apparent during the acute crisis of the winter of 1728/9, and the increase in mortality found during the winter of 1729/30 involved a much greater increase in the number of child burials. As a general rule, though, this was an *adult* crisis, or at least it was adults who died in greater numbers; we cannot know how burial figures relate

Figure 5 'Adult' and 'child' burials in Garstang, Prescott and Sefton, 1726–1731



Source: Garstang, Prescott and Sefton parish registers.

to morbidity.³⁷ In turn, this would support the attribution of the late summer and autumn peaks to typhus or some similar fever, epidemics of which generally did not cause high mortality among children.³⁸

There is, then, evidence of selectivity by age, if not the unambiguous support for Blundell's statement we might have been able to achieve had Lancashire's registers provided the same level of detail as those of Trentham. A rather more testable assertion was made by William Stout about the *geographical* basis of the crisis when he wrote of a 'great mortalety in the plaine country' which was 'much more then in the towns'.³⁹ This clear statement of geographical selectivity can easily be explored thanks to the peculiar administrative topography of Stout's home parish of Lancaster, which covers a vast area of northern Lancashire including large tracts of countryside as well as the urban centre itself.⁴⁰ The register is diligent in its distinction between those buried from the town, and those from the rural out-townships. Thus we can use Lancaster's register (which also records the deaths of prisoners in Lancaster castle) to quantify the monthly burial totals for urban and rural parts of this significant section of northern Lancashire, and the results from this exercise are set out in Figure 6. Again they are slightly ambiguous. The harvest year 1728/9 saw a noticeable increase in urban burials, yet the data do seem broadly to support William Stout's assertion that it was the 'plain country' that was hit hardest. The increase in the numbers of burials during Lancaster's crisis (which in this case incorporated the harvest years 1727/8 and 1728/9) was more notable in the rural townships and, as a proportion of the total, urban burials were at their lowest point between 1724/5 and 1732/3 during the two crisis years. The first 12 months of the crisis in particular saw the balance shifted decisively towards the countryside.

Figure 6 Geographical origins of burials (percentage) in Lancaster parish, 1724–1733 (harvest years)

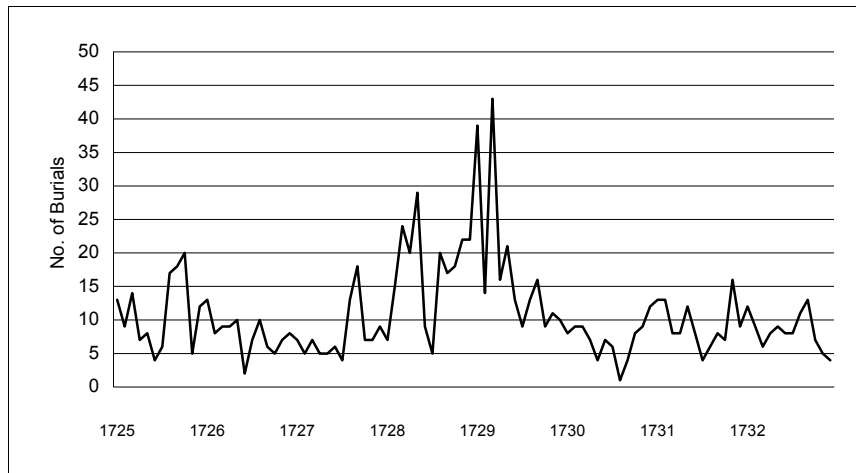


Source: Lancaster parish register

It is difficult to see why this should be the case, especially when typhus—a louse-borne infection that thrives in cramped conditions—is usually seen as one of the main killers. One explanation could be that malnutrition played the decisive role: since towns often had more developed political structures they were better able to instigate measures for the relief of the poor, and therefore the higher mortality in the countryside could be an indirect function of the comparatively lower purchasing power of the poor there. On the other hand, it has been shown that the north of the county, including Lancaster, was generally less hard hit by the typhus-like late summer and autumn epidemics than the south, whereas this region felt the impact of the wintertime respiratory diseases much harder. The picture is clarified by Figure 8, which charts the month-by-month course of the crisis in Lancaster Parish. In particular, this shows that while there was a small peak in August and September 1727, the main swelling of mortality during the first 12 months of the crisis came in the later winter and early spring. This is a critically important local detail, for it places the true beginning of Lancaster’s population crisis around three or four months after the onset of horse-cold in the county.⁴¹ The connection between the animal disease and that in humans is a plausible one, and indeed was made at the time, and if we can accept that it was a transfer of epidemic sickness from horse to humans that set off the most severe early mortality in Lancaster then it becomes much easier to see how rural areas might have been hit disproportionately hard.⁴²

The third and arguably most interesting idea is that the crisis hit the poor harder than the better off. According to Hillary, writing from Ripon, the

Figure 7 Burials in Lancaster parish, 1725–1732



Source: Lancaster parish registers

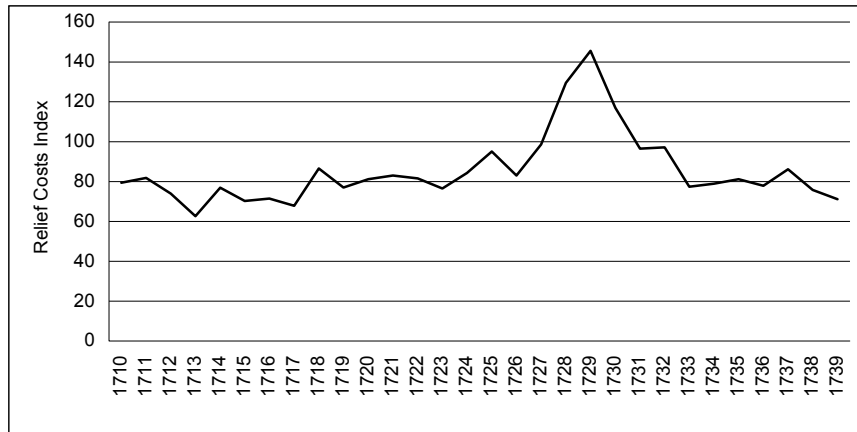
intermittent fevers of the autumn of 1727 were so frequent that ‘almost one third part of the poorer labouring people in most places were afflicted with it’.⁴³ Meanwhile, the same author noted disease in the winter of 1727/8 being especially hard on the economically vulnerable:

Many of the labouring and poor people, who used a low diet, and were much exposed to the injuries and changes of the weather, died; many of whom probably wanted the necessary assistance of diet and medicines... Nor did any other method, which art could afford, relieve them: insomuch that many of the little country towns were almost stripped of their poor people.

By contrast, ‘very few of the richer people, who used a more generous way of living, and were not exposed to the inclemencies of the weather, were seized with any of this diseases at this time’.⁴⁴ At York, Wintringham agreed that disease in the late 1720s was socially selective: it was the labouring classes that bore the brunt of the intermittent fevers at the end of 1727, while the ‘many pleurisies... and anginas and peripneumonias’ of the winter of 1728/9 ‘carried off many of the common people’.⁴⁵ These statements seem to be suggesting that morbidity was more widespread amongst the poor than the better off, but there is also a hint (Hillary’s comment about diet in particular) that amongst the infected as a whole the poor may have also suffered higher levels of mortality.

Clearly the crisis had an impact on the poorer members of society, and this was most obviously manifested in high expenditure on poor relief across the county. Figure 8 shows a composite mean of poor relief expenditures (with 100

Figure 8 Composite mean of poor account expenditures 1710–1739 (indexed, 1690–1750 = 100)



Source: Account of overseers of the poor in 17 townships (see note 44).

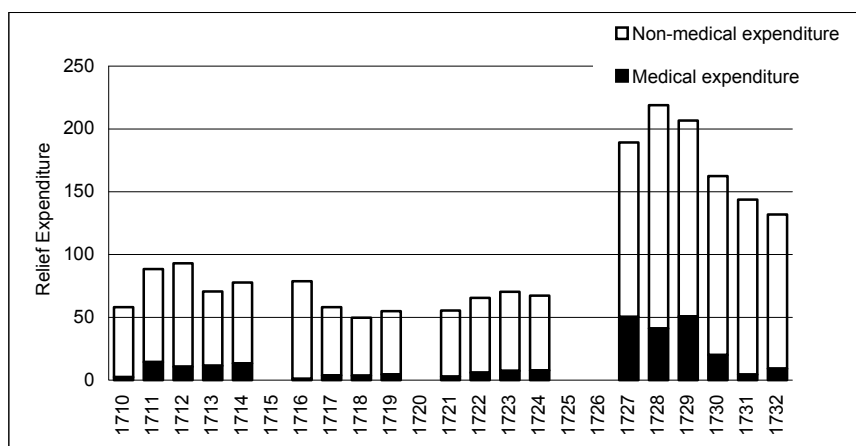
representing the whole period between 1690 and 1750) across the crisis period, indicating a very marked peak in the late 1720s.⁴⁶ This seems to have been partly responsible for the spate of workhouse foundations in the county around 1730, with Stout recording that in Lancaster, as a response to spiralling poor rates,

a house was hired to entertaine the poor in, to be maintained without goeing a begging, and to imploy such as were able to worke in some imploy; and a person to set them on to worke. Upon which, many that used to beg, finding themselves stopped from begging, fell to work, rather then to be confined to the poor house.⁴⁷

Of course, some of this rise was undoubtedly the result of high food prices, a link that Stout made explicitly, but there is also evidence of increased medical costs compatible with a model in which widespread sickness was a major cause of poverty. In Atherton, a township blessed with detailed surviving poor law accounts, the amount and proportion of money spent on medical care for the poor rose markedly between 1727 and 1729 (Figure 9), suggesting an independent role for widespread sickness.⁴⁸

The more interesting question, however, is whether this increased deprivation translated into higher levels of mortality amongst the poor and vulnerable. Again we can turn to the information contained in burial registers to explore this question in more detail. Unfortunately, only a small proportion of parish registers contain enough information about occupations to be quantified in this way. Parish clerks in the south of the county seem to have been more diligent in their recording of occupations than elsewhere and therefore we are forced to incorporate a geographical bias into our sample. There is also the basic

Figure 9 Poor expenditure in Atherton, 1710–1732



Source: Atherton poor accounts: WAS,TR/Ath/C/2/2–5.

problem that many parishes were simply too sparsely populated to throw up any meaningful data in this way. The choice of sample parishes, then, is severely restricted. Furthermore, there are very real methodological problems in using the kind of bland occupational titles used in parish registers. Three especially serious concerns stand out. Firstly, in a society in which the division of labour was only partial, single occupational titles conceal multiple individual earning strategies. Secondly, since earning was pooled between members of a household, the use of male adult occupational titles does little justice to the contributions of women and children to the domestic economy. Thirdly, titles themselves can be difficult to interpret. A chapman, for example, was almost certainly usually a small tradesman, perhaps relatively poor, but Bolton-le-Moors parish buried two ‘Gentleman’ chapmen in the period under study. Similarly, a collier on the coalfield was likely to have been a coal miner, one in the north of the county would have worked charcoal.

With these caveats in mind, four registers have been used: Prescott, Melling-in-Halsall, Bolton-le-Moors and Hindley.⁴⁹ Prescott and Bolton-le-Moors dominate the sample, accounting for a respective 39 and 49 per cent of the 4,870 burials counted; Melling and Hindley, meanwhile, contributed only 7 and 5 per cent respectively. Of the four, the last two were dominated by textile workers: in Hindley these were usually fustian weavers, while in Bolton they were normally simply designated ‘weaver’, but from what we know about the parish we may assume the majority were likewise employed.⁵⁰ Melling-in-Halsall’s population appears to have been primarily engaged in agriculture, but with significant numbers also employed in small rural trades and manufacturing. Prescott provides the most complex situation, with a notably diverse occupational profile. Metalworking appears to have been more

Table 1 Burials by occupation in Bolton-le-Moors, Hindley, Melling and Prescott, 1721–1735

	Burials per year (non-crisis)	Burials per year (crisis)	% increase during crisis	Total burials
Gentry, mercantile, and professional	9.7	9.0	-8	130
Yeoman, farmer, and husbandman	38.2	64.7	+69	594
Metal-working	8.2	14.0	+70	134
Textiles	63.8	116.3	+82	953
Mining and fuel-related	12.1	20.7	+75	201
Other skilled and semi-skilled	71.7	111.3	+55	1,079
Total skilled and semi-skilled	155.9	262.3	+68	2,367
Unskilled labour	27.0	60.7	+125	494
Widows	30.0	79.0	+163	547
Spinsters	9.5	25.7	+170	185
Poor	0.5	1.0	+51	27
Other vulnerable	6.8	10.7	+58	77
Total vulnerable	46.8	116.3	+149	844
Unknown	29.4	53.3	+81	441

Source: Bolton-le-Moors parish register (1723–1734); Hindley parish register (1721–1735); Melling-in-Halsall chapelry register (1722–1735); Prescott parish register (1721–1735).

important than textiles, while mining and fuel production dwarfed both as an employer. There was also, as we would expect, a significant agricultural sector in each parish, and there were a small number of gentle, professional and mercantile occupations recorded in all except Hindley. In sum, the four parishes provide a relatively good sample of different types of economic activity, with the occupational structure of Prescott particularly diverse, the small town of Bolton (within the parish of Bolton-le-Moors) adding a significant though not overwhelming urban dimension.

The first point to take from Table 1 is that the gentle, mercantile and professional category experienced no increased mortality, suggesting at least some social differentiation in the incidence of death. On the other hand, outside this group, high mortality was general across almost all occupational groups. If, however, we calculate the relative increase in the number of burials falling into each category, then we find that there were noticeable alterations in the burial profile outside the 'elite' group. There seems to have been a general shift in the balance of burials down the social scale, towards the more vulnerable groups in society, taken in this case to include widows, spinsters, travellers, and paupers.⁵¹ The most marked proportional growth was amongst widows and spinsters. In the former case it is likely that this reflects the larger numbers of widows in a population increasingly fractured by widespread death, but the increase in the proportion of spinster burials suggests that social vulnerability was also a factor. In addition, there was a clear difference in the

proportional increase of burials of unskilled labourers when compared to the agriculturalist and skilled and semi-skilled labourers.⁵² In fact, the increase amongst the first group was not far short of twice as marked as the last two. Overall, then, it does seem safe to conclude that there was indeed a relationship between poverty and mortality.

Conclusion

There is much that can be said about the population crisis of 1727–1730. Given the wide survival of records, from parish registers to poor accounts to published medical tracts, it is surprising that this violent series of epidemics has not received more attention from social and medical historians. Obviously, a short article such as this can only scratch the surface of what was a major event in demographic history. What we can offer, however, is some suggestive detail about the course and impact of the crisis. Indeed, the kind of intensive local analysis presented here, and encouraged by this journal in particular, proves particularly instructive. We learn, for example, that in Lancashire there were four separate peaks in burials standing out against a background of increased mortality: two in the late summer and autumn of 1727 and 1728, then two in the winter of 1728/9 and 1729/30. This picture suggests broad similarities with that offered by other studies. Wrigley and Schofield, in particular, detected the crisis beginning suddenly in August and September of 1727, then undergoing a period of geographical extension after July 1728.⁵³ A similar chronology is also evident from Gooder's study of Warwickshire.⁵⁴ It is also apparent that the crisis took a different course in the north of the county (where the winter 1728/9 peak stands out very markedly) and the south (where the earlier summer/autumn peaks were much more severe than further north). We can also say something about the social selectivity of mortality during the epidemics. It is extremely difficult to test precisely Nicholas Blundell's assertion that the over-50s suffered most in Lancashire, but corroborative data from Staffordshire, and the clear trend towards a higher volume of adult burials across the crisis years, does suggest that he was broadly correct. Similarly, evidence from the vast parish of Lancaster lends some support to William Stout's assertion that the diseases were more keenly suffered in the countryside than the towns, particularly, it seems, in the wake of the horse infection in late 1727. Finally, the evidence of both the poor law and the occupational profile of those who died suggest a real connection, as emphasised by some commentators, between poverty and mortality.

NOTES

1. E. A. Wrigley and R.S. Schofield, *The population history of England, 1541–1871: a reconstruction* (London, 1981), 652-3, 667, 681–4.
2. In all likelihood the Civil War years saw higher mortality levels, but burial records are notoriously patchy and so have been excluded: C. Carlton, *Going to the wars: the experience of the British civil wars, 1638-1651* (London, 1994), 211, 340.
3. But see J.D. Chambers, *The Vale of Trent, 1670-1800: a regional study of economic change* (London, 1957), 29-30; T. S. Ashton, *Economic fluctuations in England, 1700-1800* (Oxford, 1959), 144-5; C. Creighton, *A history of epidemics in Britain*, 2nd ed., Vol. 1 (London, 1965), 66-74, 341-6; D.E.C. Eversley, 'A survey of population in an area of Worcestershire from 1660 to 1850 on the basis of

- parish registers', in D.V. Glass and D.E.C. Eversley eds, *Population in history: essays in historical demography* (London, 1965), 408–10; J.A. Johnston, 'The impact of the epidemics of 1727–30 in south-west Worcestershire', *Medical History*, 15 (1971), 278–92; A. Gooder, 'The population crisis of 1727–30 in Warwickshire', *Midland History*, 1 (1972), 1–22; A.B. Appleby, 'Epidemics and famine in the Little Ice Age', *Journal of Interdisciplinary History*, 10 (1980), 643.
4. J. Walton, *Lancashire: a social history, 1558–1939* (Manchester, 1987), 20–35, 60–83; C.B. Phillips and J.H. Smith, *Lancashire and Cheshire from AD 1540* (London, 1994), 5–131; J. Stobart, *The first industrial region: north-west England, c. 1700–60* (Manchester, 2004).
 5. Stobart, *First industrial region*, 103–37; J. Langton, *Geographical change and industrial revolution: coal mining in south-west Lancashire, 1590–1799* (Cambridge, 1979).
 6. J. Walton, 'Proto-industrialisation and the first industrial revolution: the case of Lancashire', in P. Hudson ed., *Regions and industries: a perspective on the industrial revolution in Britain* (Cambridge, 1989), 41–68; Stobart, *First industrial region*, 64–102.
 7. A.P. Wadsworth and J. de L. Mann, *The cotton trade and industrial Lancashire, 1600–1780* (Manchester, 1931).
 8. Phillips and Smith, *Lancashire and Cheshire*, 66–7.
 9. According to figures in Phillips and Smith's history, the population of the county stood at just over 190,000 in the 1690s, while by 1750 it was nearly at 300,000; the figure of 225,000 for 1730 would make some allowance for growth over the period: Phillips and Smith, *Lancashire and Cheshire*, 66–70.
 10. Walton, *Lancashire*, 30.
 11. C.D. Rogers, *The Lancashire population crisis of 1623* (Manchester, 1975); A.B. Appleby, *Famine in Tudor and Stuart England* (Liverpool, 1979), 133–154.
 12. See the discussion in J. Walter and R. Schofield, 'Famine, disease and crisis mortality in early modern society', in J. Walter and R. Schofield eds, *Famine, disease and the social order in early modern society* (Cambridge, 1989), 41–8; cf. J. Healey, 'Marginality and misfortune: poverty and social welfare in Lancashire, c. 1630–1760' (unpublished DPhil thesis, University of Oxford, 2008), 278–92.
 13. P. Bowden, 'Statistical appendix', in J. Thirsk ed., *The agrarian history of England and Wales, Vol. 5: 1640–1750, part two: agrarian change* (Cambridge, 1985), 830–31.
 14. Ashton, *Economic fluctuations*, 183.
 15. W. Stout, *The autobiography of William Stout of Lancaster, 1665–1752*, ed. J. D. Marshall, Chetham Society, 3rd Ser., 14 (Manchester, 1967), 201.
 16. Stout, *Autobiography*, 204.
 17. N. Blundell, *The great diurnal of Nicholas Blundell of Little Crosby, Lancs. transcribed by Frank Tyrer, Vol. 3*, ed. J.J. Bagley, Record Society of Lancashire and Cheshire, 114 (Chester, 1972), 230.
 18. Blundell, *Great diurnal*, 230n.
 19. Lancashire Record Office, Preston (hereafter LRO), DDC1/400, Clifton of Lytham stewards' accounts, 1697–1798.
 20. Gooder, 'Population crisis', 21.
 21. Appleby, *Famine*, 126; P. Laslett, *The world we have lost – further explored* (London, 1983), 130–2; J. Thirsk and J.P. Cooper eds, *Seventeenth-century economic documents* (Oxford, 1972), 48–52; S. Hindle, 'Dearth and the English revolution: the harvest crisis of 1647–50', *Economic History Review*, 61, no. S1 (special issue), 64–98.
 22. W. Hillary, *A practical essay on the small-pox. To which is added, an account of the principal variations of the weather at Ripon, and the concomitant epidemical diseases, from the year 1726, to the end of the year 1734*, 2nd edn (London, 1740); C. Wintringham, *Commentarius nosologicus: a treatise on the study of diseases: embracing the epidemic diseases and variations in weather in the City of York and neighbouring places through twenty consecutive Years*, trans. E. Johnson (Pocklington, 1979).
 23. Wintringham, *Commentarius nosologicus*, 33. The severity of the crisis in York is evident from C. Galley, *The demography of early modern towns: York in the sixteenth and seventeenth centuries* (Liverpool, 1998), 180.
 24. Johnstone, 'Impact of the epidemics of 1727–30', 282–3; M. J. Dobson, *Contours of death and disease in early modern England* (Cambridge, 1997), 427–30.
 25. Hillary, *Practical essay*, 35.
 26. Blundell, *Great diurnal*, 230; Creighton, *History of epidemics*, 345–6.

27. Blundell, *Great diurnal*, 230.
28. Stout, *Autobiography*, 201.
29. A. Sparke ed., *The registers of the parish church of Deane, Vol. 2*, Lancashire Parish Register Society (hereafter LPRS), 54 (Bolton, 1916), 532-44.
30. Registers consulted: Aughton; Blackley; Bolton-le-Moors; Bolton-le-Sands; Broughton-in-Furness; Childwall; Deane; Denton; Didsbury; Downham; Garstang; Goosnargh; Gorton; Hale; Halsall; Heysham; Hindley; Lancaster; Leigh; Leyland; Lytham; Manchester; Melling-in-Halsall; Middleton; Newton Heath; North Meols; Penwortham; Prescott; Radcliffe; Rainford; Rivington; Sefton; Todmorden; Torver; Tunstall; Upholland; Urswick; Walton-on-the-Hill; Warton-in-Lonsdale; Whalley; Whittington.
31. Wrigley and Schofield, *Population history*, 67.
32. Allowing for the natural replenishment of the population. Cf. Rogers, *Lancashire Population Crisis*, 10.
33. Blundell, *Great diurnal*, 230.
34. S.W. Hutchinson ed., *Trentham parish register* (Stoke-on-Trent, 1906).
35. Appleby, *Famine*, 103-8.
36. Bolton Archives and Local Studies (hereafter BALS), Bolton-le-Moors Parish Register Transcript; Manchester Cathedral Archives, Manchester Parish Register; H. Brierly ed., *The parish registers of Garstang church, Vol. 2*, LPRS, 68 (Preston, 1932); J. Drabble ed., *The registers of the parish of Prescott, 1665-1726, Vol. 4*, LPRS, 149 (Preston, 2000); J. Drabble ed., *The registers of the parish of Prescott, 1727-1765, Vol. 5*, LPRS, 156 (Preston, 2003); C.F. Russell ed., *The parish registers of Sefton, 1597-1783*, LPRS, 86 (Preston, 1947). Because of their size, Bolton-le-Moors and Manchester have been treated separately.
37. Cf. Eversley, 'Survey of population', 408.
38. Appleby, *Famine*, 103.
39. Stout, *Autobiography*, 201.
40. W. Farrer and J. Brownbill eds, *The Victoria history of the county of Lancaster*, 8 (London, 1914), 4-89.
41. Blundell, *Great diurnal*, 230.
42. One nagging doubt remains, which is that Stout was referring to the sickly *summer* in which burials were higher in the countryside, whereas the main mortality peak discussed above occurred in the spring. Thus, Stout's claim is apparently at variance with the parish register. This should not cause undue concern, however, as the more objective data of the parish register is fairly unambiguous. Moreover, Stout was probably writing around 15 years later and may have unwittingly conflated summer with spring: Stout, *Autobiography*, 17.
43. Hillary, *Practical essay*, 11.
44. Hillary, *Practical essay*, 14.
45. Wintringham, *Commentarius nosologicus*, 34, 38.
46. LRO, PR/2890/2/1, Accrington (New and Old) parish accounts, 1691-1800; LRO, PR/872, Alston churchwardens', overseers' and constables' accounts, 1712-1817; Wigan Archive Service, Leigh (hereafter WAS), TR/Ath/C/2/1-8, Atherton overseers' accounts, 1692-1751; LRO, PR/2592/2, Bispham town's book, 1722-1808; Bury hamlet overseers' accounts, 1692-1760, microfilm copy in LRO; LRO, PR/499-500, Caton township accounts, 1714-95; Manchester Archives and Local Studies, Manchester (hereafter MALS), M/10/7/2/1, Cheetham overseers' accounts, 1693-1791; MALS, M/10/9/2/1, Chorlton-on-Medlock overseers' accounts, 1718-1794; LRO, PR/256, Croston township accounts, 1717-1855; MALS, L82/2/1, Goodshaw overseers' accounts, 1691-1741; LRO, PR/264-5, Halsall township accounts, 1694-1885; Cumbria Record Office, Kendal Branch (hereafter CRO (K)), WPR/83/7/3, Hawkshead overseers' accounts, 1690-1750; WPR/83/4/2, Monk Coniston with Skelwith overseers' accounts, 1691-1808; LRO, PR/2667, Nether Wyresdale town accounts book, 1685-1837; WAS, TR/Pe/C/1/1-37, Pennington overseers' papers, 1699-1750; LRO, PR/3168/7/9, Tarleton overseers' accounts, 1708-1767. In each township a mean annual disbursement figure was calculated, covering all surviving years. This was taken as 100, with each year's disbursement total recalculated as a proportion of 100. A mean was then taken of all extant annual values to make up the composite mean for the sample as a whole in each year.
47. Stout, *Autobiography*, 207. Cf. Healey, 'Marginality and misfortune', 123-4, 318-9.

48. WAS, Tr/Ath/C/2/2-5, Atherton overseers' accounts, 1704–33.
49. BALS, Bolton-le-Moors Parish Register Transcript; K.T. Taylor ed., *The registers of Hindley, 1644–1814*, LPRS, **138** (Preston, 1995); T. Williams ed., *The registers of Melling chapel in the parish of Halsall, 1603–1837*, LPRS, **108** (Preston, 1969); Drabble ed., *Registers of the parish of Prescott, 1665–1726*; Drabble ed., *Registers of the parish of Prescott, 1727–1765*.
50. Wives and children are counted under their husband/father's occupational title.
51. To a certain extent the inclusion of widows and spinsters begs questions. Nonetheless, these groups were almost always over-represented in lists of the poor so it seems fair to count single women in this category. On the vulnerability of single women see: Healey, 'Marginality and misfortune', 224–34.
52. Agricultural labourers, who were clearly described simply as 'labourers' by the compilers of the sample registers, must be regarded to lie within the 'unskilled labour' category. Cf. A. J. Gritt, 'The "survival" of service in the English agricultural labour force: lessons from Lancashire, c. 1650–1851', *Agricultural History Review*, **50** (2002), 34–8.
53. Wrigley and Schofield, *Population history*, 681–4.
54. Gooder, 'Population crisis', 16–17.

During the intervening periods of the two wars, Japan had adopted intensive populationist policy under the influence of "eugenic movement" designed for encouraging growth of racially "pure" population. Soon after the end of the Second World War, the country switched over to anti-natalist population policy, which continued up to 1960s. Anti-natalist population policies in such countries were necessitated by a phenomenal growth in population during the recent past. It will, however, be not correct to suggest that the anti-natalist policy is a phenomenon of the twentieth century. Even during the ancient period some Greek thinkers had advocated limits to family size with a view to obtain the ideal population size of the nation-state. The Other Population Crisis. A It is an unquestioned principle that has dominated international thinking for decades: we live in an overcrowded world teeming with billions of humans who are destined to suffocate our cities and squeeze our planet of its precious resources. Our species is inexorably wrecking Earth: flooding valleys, cutting down forests and destroying the habitats of animals and plants faster than scientists can classify them. Our future is destined to be nasty, brutish, and cramped. B Or is it? C As evidence, statisticians point to a simple, stark fact: people are having fewer and fewer children. In the 1970s, global fertility rates stood at about six children per woman. Today the average is 2.9 and falling. 8 Rogers, Colin D., *The Lancashire Population Crisis of 1623* (Manchester, 1975); Appleby, *Famine*, pp. 145-56; Thirsk, Joan and Cooper, J. P., eds., *Seventeenth Century Economic Documents* (Oxford, 1972), pp. 51-52. 9 Skipp, Victor, *Crisis and Development: An Ecological Case Study of the Forest of Arden, 1570-1674* (Cambridge, 1978), pp. 13-38. Most of the higher than normal mortality and mortality in London fluctuated fairly strongly can be traced to an epidemic of smallpox. 57 See note 8 above. 58 Gooder, A., "The Population Crisis of 1727-30 in Warwickshire," *Midland History*, 1, no. 4 (1974), 1-22; Levine, David, *Family Formation in an Age of Nascent Capitalism* (New York, 1977), pp. 100-02. 59 There was very general sickness, probably from more than one disease.