

MORTALITY CRISIS AND HOUSEHOLD STRUCTURE: AN ANALYSIS OF PARISH REGISTERS AND THE COMPTON CENSUS, BROUGHTON, LANCASHIRE, 1667–1676¹

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Introduction

Local mortality crises have been well documented in this journal and continue to attract the attention of historical demographers.² Such crises were ubiquitous in the early modern period and form one of the characteristics of the English demographic regime up to the mid-eighteenth century. Short periods of heightened mortality are immediately apparent in almost any parish register, indicating the frequency with which the long-term population increase from 1538 to 1750 was punctuated by short-term local crises. Moreover, as the aggregative analysis of parish register data is relatively simple, basic research into the scale and impact of mortality crisis is easily achieved, even by inexperienced researchers, for a very large number of English parishes.³

Unfortunately, the same cannot be said of household structure in early modern communities. Compared with continental Europe, English pre-census population listings are far less numerous or detailed and, although much work has been done on household size and structure from the sixteenth century onwards, considerable potential remains for innovative research using these sources.⁴ Moreover, our knowledge of the household and family structure of Lancashire in the early modern period is very limited, and the role of the family in the proto-industrial phase of development, so intensively studied in continental Europe, and debated for other English regions, is significantly under-researched in the north west of England.⁵ The analysis of 100 pre-industrial English communities 1574–1821 undertaken by Laslett includes none in Lancashire and Yorkshire and, despite the inclusion of a number of communities in Cumberland and Westmorland, the pastoral/industrial areas of the north west remain largely unexplored.⁶ These 100 communities may serve as a useful comparator, but, as Goose noted, Laslett made no attempt 'to consider variations over time within these three centuries which might have resulted from changing economic, social and demographic conditions'.⁷ This current article, in similar fashion to Goose's study of Cambridge, seeks to develop our understanding of household structure as a means of gauging the

impact of crisis mortality and socio-economic factors on households and families.

It has long been accepted that, in England, the simple nuclear family was the dominant form of household organisation throughout the early modern period.⁸ For the modern period, source availability has enabled the dominance of the nuclear family model to be challenged in a range of community types, demonstrating the more complex, if temporary, arrangements that familial or community circumstances necessitated.⁹ Nevertheless, a clear distinction needs to be made between household composition and the functionality of wider kinship networks based on residential proximity rather than co-residency. Due to the paucity of English data from the early modern period, historians seeking to challenge the view of the nuclear family as the dominant form of household structure have been forced to use sources creatively, or utilise sources only covering a sub-set of the population, most notably paupers.¹⁰

In a rare example of an investigation into household formation in proto-industrial communities in Lancashire, and drawing support from studies of nineteenth-century Kent and Exeter, King argues that the snapshot census is an unreliable guide to the levels of complex households in society.¹¹ King argues that in Garstang between 1817 and 1826, 40 per cent of households experienced a period of complexity. Nevertheless, King's research is largely based on vestry records, and despite his claim that a majority of families would receive poor relief at some point, this simply indicates that two-fifths of pauper families were subject to a temporary phase of complex household composition. While it is significant that a temporary phase of domestic complexity might be consequent upon destitution and pauperisation, the applicability to wider society is more questionable. Temporary domestic arrangements necessitated by crisis are not inconsistent with the domination of the nuclear family. In Garstang, the number of complex families in any of King's census years—1817, 1821 and 1826—was in the range 5–15 per cent, and there were clearly fluctuations from one year to the next as the poor law authorities adjudicated on individual cases. King concludes that 'the protoindustrial household system was extremely volatile'.¹² However, the fluctuations could just as easily be described as temporary, pragmatic responses to individual circumstances. King explicitly refutes Laslett's conclusion that 'The suggestion that those engaged in protoindustry in northern and western Europe also lived in domestic groups containing beves of their immediate kin is no longer credited'.¹³ But it has to be said that there is a significant difference between temporary arrangements of the poor addressed by King, and the domestic arrangements with a degree of permanence to which Laslett refers. Poor law evidence may help to counter the weaknesses of the snapshot census, but in the absence of the snapshot census, relying on dynamic records for a sub-set of the population, even where those records enable the construction of individual life histories, can undoubtedly seriously mislead. On the other hand, household structure is never completely fixed, except by population listings, and in order to explain the composition of the household as measured by such returns, some attempt must be made to examine the dynamics of the population in the years immediately before the listing was made.

Household structure was a dynamic aspect of social structure as families responded to short- and medium-term demographic and economic change, and as individual families were formed, expanded and contracted. Some families undoubtedly resorted to complex structures in response to crisis, either voluntarily or as a consequence of decisions made by local administrators of poor relief. But if household structures were generally reactive to crisis, and if families were drastically reconfigured due to exceptional circumstances, then it seems reasonable to suppose that mortality crisis might cause a measurable shift in household and community structures, altering or impacting upon kinship networks and inheritance patterns. It might also herald a major shift in the transfer of wealth within and between propertied families, and an increase in the demand for relief on the part of the poor. Indeed, mortality crisis ought to be seen not simply as a demographic event, but as a crisis impacting upon, or perhaps reflecting, the agricultural, industrial and commercial economy. It might also be seen as a significant community and family crisis creating both immediate challenges and opportunities, and the ways in which families and communities coped with the challenges and responded to the opportunities is worthy of attention. Nevertheless, the extent to which mortality crisis influenced issues such as inheritance, household structures and demand for poor relief would vary according to local circumstance, not least of which is the specific demographic impact of the mortality crisis. Plague, famine, and epidemic diseases were age-, sex- and class-specific, and the impact on family and community structures would vary unpredictably across time and space depending upon specific local factors.

Several studies have demonstrated that communities quickly recovered from periods of crisis mortality. In Cambridge, for instance, notwithstanding evidence of growing poverty and overcrowding towards the later sixteenth century, the population trebled between the 1520s and the 1620s, despite frequent mortality crises. This growth was sustained by 'large-scale immigration'.¹⁴ The trade of Manchester was only temporarily interrupted, and soon reverted to normality, following a visitation of plague in 1605, largely through in-migration as the diminished population was replaced.¹⁵ Nevertheless, the short-term impact of mortality crises is unlikely to be felt equally across all communities. The economy of Manchester, for instance, even as early as 1605, was one of the nodes on a network of northern market towns with a considerably more vibrant economy than most northern parishes. Indeed, market centres as a whole, whilst perhaps being vulnerable to communicable disease, exerted a greater pull on the rural population, and may have recovered more quickly than small rural communities with a relatively fragile economy. Nevertheless, as the economy of market centres was fundamental to the prosperity of the rural hinterlands, epidemic disease in towns could spell economic disaster for their hinterlands. Conversely, a localised crisis in a small rural parish is likely to have had little or no impact on the broader region, either economically or demographically. Slack argued that 'Plague's impact on the economy was similar to its impact on the demography of England. In the short term, it spelled havoc for normal patterns of

behaviour. In the longer term it merely confirmed existing trends and accentuated existing weaknesses.¹⁶ But different causes of mortality crisis are also likely to impact upon the ability of a community or region to recover. A widespread famine, for instance, is likely to have had a much deeper impact than an isolated and localised outbreak of disease. Indeed, Appleby argued that Cumberland and Westmorland suffered severe dislocation during the famines of 1597 and 1623 resulting in long-term consequences in the markets for labour and land.¹⁷

While many communities may have recovered quickly, the effect of mortality crisis on families, and on household structure, is likely to have been more severe. Indeed, as Wrightson observed, 'Mortality crises were a collective trauma. Their impact, however, was essentially individual and familial'.¹⁸ Family reconstitution has shown how plague decimated families in late Elizabethan Penrith, and it would seem fair to assume that such rapid devastation would have significant effects on kinship networks and family structures.¹⁹ Plague was particularly virulent, was communicated rapidly within families and was less discerning in terms of the age, sex and social class of its victims than some other causes of crisis mortality. Indeed, Slack has suggested that the 'most terrifying aspect of the incidence of plague was the clustering of deaths in family groups'.²⁰ Nevertheless, even in severe outbreaks of plagues in urban centres, the clustering of deaths within families, whilst disastrous for those affected, left other families entirely unscathed. Goose's work on household structure in Cambridge c. 1619–1632 is based on population listings for five of the town's fourteen parishes within the context of rapid population growth, overcrowding, poverty and frequent visitations of plague and other mortality crises between 1574 and 1631, including plague outbreaks in 1625 and 1630–1631.²¹ Although he concludes that—recurrent plague notwithstanding—the size and structure of households in early seventeenth-century Cambridge was broadly comparable to Laslett's 100 rural communities, there are some notable differences. In Cambridge, despite significant variation between parishes of different socio-economic status, household size was generally smaller and there were fewer children in the overall population. Moreover, such differences were generally more marked in the poorest parishes that had been most severely affected by plague.²²

Sources

Despite the work cited above, we still know very little about the effects of mortality crisis on seventeenth-century family and community structures, and the responses to such crises. This article will investigate some of these issues in the community of Broughton in Amounderness, Lancashire. Broughton was a chapelry in the parish of Preston, but its southern boundary was with Fulwood, a distant satellite of Lancaster parish. Broughton chapelry contained several minor settlements and the manors of Broughton Tower, Ingolhead and Bank Hall. Several neighbouring townships, most notably Barton and Houghton, did not have churches or ministers and, although they were separate townships, were within the chapelry of Broughton.²³ The scattered settlement

and weak manorial control causes some confusion about the geographical boundaries to which extant records relate: some of the sources used for this study relate to the township of Broughton, others to the larger chapelry, and the distinction between the two is not always entirely clear.

The Oath of Protestation was designed to list all men over 18 in every parish and provides one basis for an estimate of the population. It was taken in 1642 in response to the growing political tensions between parliament and Charles I. The returns vary in quality, but those for Broughton simply record the names of the 109 men who took the oath, and the 131 men who refused. There is no way of knowing how comprehensive this list is. However, the returns appear to relate to the entire chapelry and not just the township, and a multiplying factor of 3.0 to 3.5 suggests a population of c. 720–840 in 1642.²⁴ Unfortunately it is not possible to determine the proportion of this population resident in the township, but other sources can provide estimates.

The 1664 Hearth Tax return for Broughton lists 84 householders including 30 who were exempt from the tax. A multiplication factor of 4.3 suggests a population of around 360.²⁵ Nationally and locally population declined slightly during the second half of the seventeenth century: on a national level Wrigley and Schofield suggest a decline of just 1.7 per cent between 1641 and 1676, and of 0.5 per cent between 1641 and 1666.²⁶ Although these national aggregates may mask regional variations, we would not expect to see any marked change in population levels in Broughton between 1642 and the eve of the crisis.

The Compton Census of 1676 was an ecclesiastical census of communicants and recusants prepared by parish priests, organised by the Province of Canterbury for southern England and the Province of York for the north.²⁷ Usually the returns only include individuals over the age of 16, so the majority are not true household listings enumerating the entire population. The quality and availability of the Compton Census is generally superior in southern parishes. Indeed, the Lancashire returns have mostly failed to survive, with Broughton township being one of just six communities with extant returns, of which most are incomplete or damaged.²⁸ We are therefore fortunate that the Broughton return is particularly detailed, apparently enumerating all individuals, including children and servants, listed in family/household groupings (see Table 1). This return lists a total of 348 individuals in 97 households made up of 257 conformists and 91 recusants, representing considerably more conformists than the 1642 Oath of Protestation. Nevertheless, children were not recorded as recusants, and several married couples returned only one of the partners as recusant, therefore suggesting hidden nonconformity. The 1676 population accords closely with the estimate derived from the Hearth Tax returns, although we must bear in mind that the intervening years witnessed a severe mortality crisis. Nevertheless, the Compton Census provides the opportunity to measure household and family structure in a community that had recently experienced a prolonged mortality crisis. Due to the paucity of detailed household listings available, such opportunities are rare.

Table 1 Extract of Compton Census return for Broughton township*

Broughton 23rd November

This is a true and pfect accompte of all & very the inhabitants and sojourners in our Chappellry according to the order to us directed.

Thomas Turner & Ellin his wife, George Turner his nephew, Dorothy Alston his woman servant.

Richard Barton & Isabell his wife & Robert his son.

Thomas Arkwright & Alice his wife, Henry & Richard his sonnes & Mary his daughter.

William Arkwright & Anne his wife, Thomas his son & Agnes his daughter.

John Arkwright & Elizabeth his wife, Thomas his son & Jenet his daughter.

Lawrence Symson & Mary his wife, Anne & Mary his daughters, George Beesley his man servant.

Note: *Although the document refers to the Chapelry, Broughton township is clearly delineated and forms the basis for the current article.

Source: Broughton Compton Census, Lancs R.O. ARR 31

Broughton's parish registers survive from 1653, and form the basis of the research for this article.²⁹ The extent to which the quality of the registers is affected by nonconformity has not been determined, and it must be borne in mind that there was an active Catholic community in central Lancashire with Jesuit priests conducting their own ceremonies in isolated chapels. In Broughton itself the manor of Bank Hall was held in moieties, with 'one half being in trust for the Roman Catholic missionary priests of the district, for whom it served as a centre'.³⁰ No compensation for the possible impact of nonconformity has been made in the following analysis. Further problems are caused by the fact that, not only do the registers cover the entire chapelry (unlike the Hearth Tax returns and Compton Census), but there are a large number of individuals present in the Broughton registers from neighbouring parishes and chapelries.

Methods

This article is largely based on aggregate analysis of the Broughton parish registers, 1653–1676.³¹ This technique is used to establish the scale of mortality crisis in Broughton and to assess some of its characteristics. Analysis of the

Compton Census provides the basis for the discussion on the possible impact of mortality crisis on household structure. However, it must be borne in mind that the Compton Census was taken four years after the end of the crisis and therefore the observed community in 1676 had had time to begin the process of recovery and renewal through a combination of natural increase and migration. The interpretation of the impact of mortality crisis on household structure and the demographic response to crisis is aided by nominal record linkage between the parish registers, Compton Census and 1664 Hearth Tax.³²

Broughton in Amounderness

The chapelry of Broughton is located four miles north of Preston at the junction of the main route between Preston and Lancaster and the road running eastwards from the Fylde into the Ribble valley (see Figure 1). In the late seventeenth century Broughton was typical of the parishes in central Lancashire, being between 100 and 200 feet above sea level and dominated by pastoral agriculture supplemented by linen and wool production. Broughton was not a nucleated settlement, but had several clusters of houses as well as more scattered farmsteads. In 1831 the area of Broughton chapelry was 2,570 acres, with the townships of Barton and Haighton adding a further 2,500 acres to the area served by Broughton church in the seventeenth century.³³ In all respects, Broughton was very much overshadowed by its near neighbour, Preston, which was an important regional market town with a population of 2–3,000 in the mid seventeenth century and provided legal and financial services for a wide area.³⁴ The majority of people travelling to Preston from the north would have travelled through Broughton, on the main west-coast route between London and the north.

Early modern agriculture in the north west was primitive and improvements did not begin to take effect until after 1750.³⁵ Indeed, in the sixteenth and seventeenth centuries a combination of poor soils, underdeveloped communication networks and limited technology left the population vulnerable to harvest failure.³⁶ In addition to periodic subsistence crises, the north west was severely hit by outbreaks of plague with Kirkham, Macclesfield, Manchester, Penrith and Preston, among others, all being affected between the 1590s and 1630s.³⁷ Walton has suggested that agriculture was unable to support the population and Beckingsale argues that 'In general, the limitations of northern agriculture were determined by altitude, climate, soil, markets and communications'.³⁸ It is easy to overstate the poverty of the north in the early modern period, and broad regional generalisations do not do justice to the varied socio-economic structure, and relative prosperity of agriculture, to be found within Lancashire. Nevertheless, the labour structure of the early modern north west is certainly suggestive of undercapitalised small-scale production. The area between Preston and Lancaster (which includes Broughton) had the highest rates of hired agricultural labour in Lancashire, but even here yeomen and husbandman outnumbered labourers and servants 2:1. In Goosnargh and Whittingham, both of which were adjacent to Broughton, the 1642 Oath of Protestation records about 0.7 hired workers per farmer, indicating the predominance of family farming in this area.³⁹

Figure 1 Yates's Map, 1786



Mortality crisis in Broughton parish

The definition of a mortality crisis is somewhat arbitrary, but is often taken to be a year in which the number of burials was twice the average annual number in surrounding years.⁴⁰ This is a useful rule of thumb, but it is not possible to apply the relatively simple methodology proposed by Schofield to the

Table 2 Index of burials in Broughton parish, 1661–1678

| Year | Index of burials* |
|------|-------------------|
| 1661 | 65 |
| 1662 | 73 |
| 1663 | 102 |
| 1664 | 91 |
| 1665 | 73 |
| 1666 | 98 |
| 1667 | 240 |
| 1668 | 178 |
| 1669 | 156 |
| 1670 | 280 |
| 1671 | 145 |
| 1672 | 218 |
| 1673 | 149 |
| 1674 | 102 |
| 1675 | 120 |
| 1676 | 55 |
| 1677 | 145 |
| 1678 | 127 |

Note: *Index of burials: mean average of 1661–1666 and 1673–1678 = 100.

Source: Broughton parish registers

Table 3 Burials in townships of Broughton, Barton and Haighton, 1667–1672

| Year | Broughton | Barton | Haighton | Other places | Total |
|-------|-----------|--------|----------|--------------|-------|
| 1667 | 23 | 24 | 3 | 19 | 69 |
| 1668 | 21 | 12 | 3 | 13 | 49 |
| 1669 | 16 | 16 | 1 | 11 | 44 |
| 1670 | 26 | 22 | 12 | 17 | 77 |
| 1671 | 16 | 9 | 5 | 10 | 40 |
| 1672 | 17 | 23 | 5 | 15 | 60 |
| Total | 119 | 106 | 29 | 85 | 339 |

Source: Broughton parish registers

Broughton data, and the more complex statistical approach adopted by Wrigley and Schofield is inappropriate for present purposes.⁴¹ Unfortunately there is a gap in the Broughton burial register in 1659 and 1660 with only one burial recorded in these two years. Including these years in the calculation of a 20-year average would therefore prejudice the results. At the same time, with the period of suspected crisis lasting a full six years, adopting a short-period

moving average (for example, 11 or fewer years) has the effect of statistically removing the 'crisis' altogether as more than half of the years under observation are suspected 'crisis' years. To indicate the magnitude of the Broughton crisis, therefore, the number of burials in each year is expressed as an index of the mean of the burials 1661–1678, excluding the years of suspected crisis in 1667–1672. The results are shown in Table 2. This clearly shows that in 1667, 1670 and 1672 the number of burials was more than double the average for the period, and that even in 1668–1669, 1671 and 1673 the number was close to or above one and a half times the mean.

In the years 1667 to 1672, 339 people were recorded in the Broughton burial register. However, not all of these deaths were of individuals from Broughton township, nor indeed from the chapelry. Indeed, as Table 3 shows, 119 burials were of people 'of Broughton' and 106 were 'of Barton'. Other neighbouring communities were also affected. Nevertheless, if the estimates of population above are reasonably reliable, between one quarter and one third of the population of Broughton township at the start of the period died during this crisis.⁴²

The seasonality of burials in 1667 and 1670 follow remarkably similar patterns. The monthly proportion of annual burials shows a steep increase from the summer low, reaching a peak of 19 per cent in November 1667 and almost 16 per cent in November 1670 (see Figure 2). However, the pattern of burials in 1672 is markedly different: there was a strong peak in April, when one quarter of the year's burials was recorded, with relatively few burials throughout the rest of the year. Indeed, in both 1667 and 1670, more than 40 per cent of the annual burials took place in the last three months of the year; in 1672 just 11 per cent of burials took place in the same months.

The fluctuations in the mortality regime during these years of crisis show that different sections of the population were affected in different years. Although the methodology here is simplistic, we can attempt to measure the impact of mortality on men, women and children. It has been assumed that individuals who were designated 'son', 'daughter' or 'child of' in the burial register were children (though not necessarily infants), that ever-married women can be identified as 'widow', or 'wife of' (spinsters are not positively identifiable) and that all other males are adults.⁴³ Table 4 compares the proportion of burials each year of children, women and men and shows marked variations from one year to the next. The much-inflated mortality of 1667 clearly hit women and children most severely, with children also forming over two fifths of all burials in 1668. In 1669 adult males were hardest hit, although all adults were susceptible in 1670. The crisis of 1672 coincided with a marked rise in the number of child burials and although the mortality level was much reduced by 1673 children formed more than half of all burials in this year also.

The figures presented above must be compared to the background fluctuations in the balance between adult male, adult female and child burials in this period (Figure 3). Although the annual numbers of recorded burials is low for most years, child burials exceeded adult male and also exceeded adult female burials

Figure 2 Seasonality of burials in Broughton registers, 1667, 1670 and 1672 (proportion of annual burials in each month)

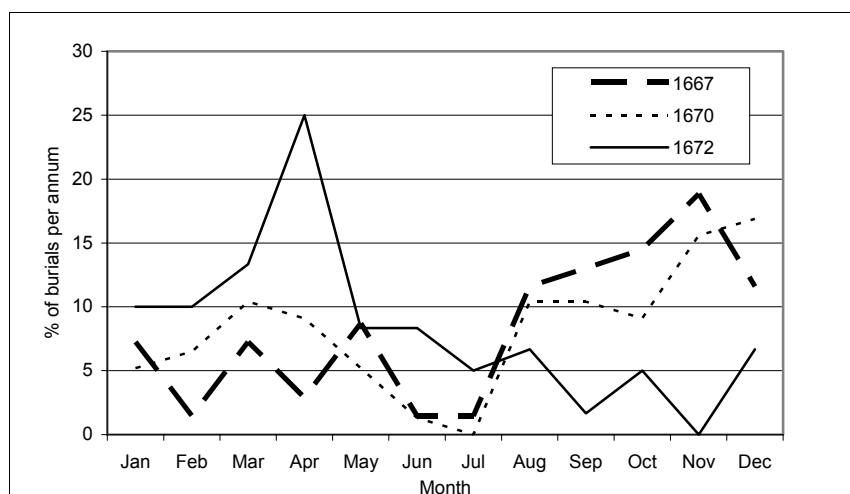


Table 4 Proportion of annual burials, children, women and men, Broughton parish, 1667–1672

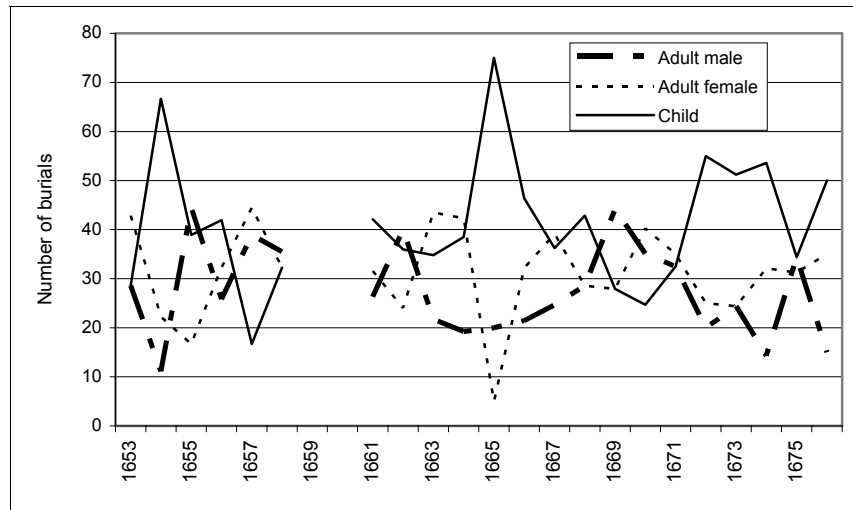
| Year | Children % | Women % | Men % | N |
|------|------------|---------|-------|----|
| 1667 | 36 | 39 | 25 | 69 |
| 1668 | 43 | 29 | 29 | 49 |
| 1669 | 27 | 30 | 43 | 44 |
| 1670 | 25 | 40 | 35 | 77 |
| 1671 | 33 | 35 | 33 | 40 |
| 1672 | 54 | 25 | 20 | 60 |

Note: Due to rounding errors the proportions do not always add up to 100

Source: Broughton parish registers

in 11 of the 21 years 1653–1676.⁴⁴ Over the whole period the peak month of child burials was March and the three months of March, April and May accounted for 35.7 per cent of all child burials, with July, August and September accounting for just 18.6 per cent. Set against this background seasonality of child burials, the marked peak in 1672 simply reflects an intensification of the normal cycle, rather than a divergence from the norm. Indeed, surges in the number of child burials occurred in 1654, 1666 and 1672–1674, when more than half of all recorded burials were of children. The fluctuations in the proportion of adults of either sex are not as marked.

Figure 3 Proportion of adult male, adult female and child burials in Broughton parish registers, 1653–1676



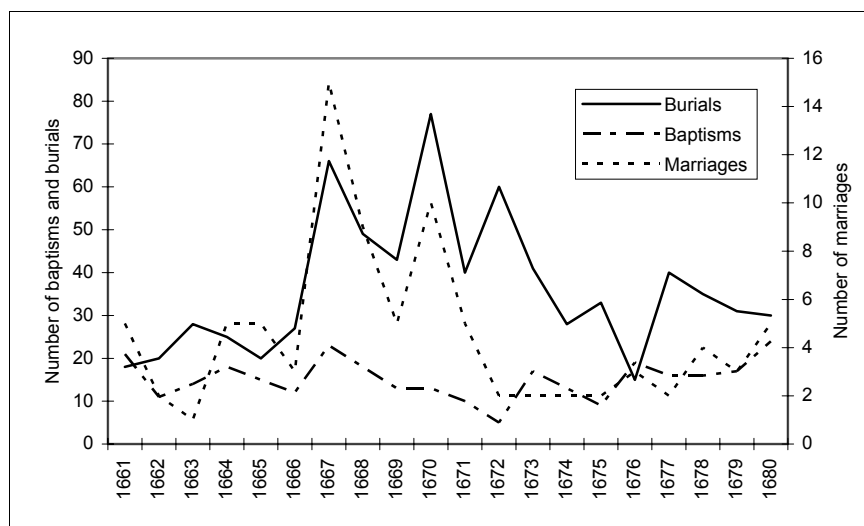
The causes of this inflated mortality are not immediately apparent, although seasonal analysis and the impact on different age groups suggest that there was not one mortality crisis but a succession of crises with different causes and effects. A national crisis occurred in 1665/6, and there was a minor crisis in 1670/1, but in general the period 1667 to 1676 has not been highlighted as a period of sustained or general crisis in the available literature.⁴⁵ Nevertheless, there is evidence that this crisis extended beyond the immediate vicinity of Broughton. Indeed, 1667 has been marked out as a year of crisis in Whitchurch, Shropshire, possibly the result of measles.⁴⁶ Of the 404 parishes used by Wrigley and Schofield, 70 were in the northern and north western counties of Cheshire, Cumberland, Derbyshire, Durham, Lancashire, Northumberland and Yorkshire. Of these 70 parishes, 43 (61 per cent) experienced crisis mortality at some point between 1667 and 1676.⁴⁷ However, only 18 experienced crisis in more than one year during this period, suggesting that Broughton was particularly severely affected.

Some effects of the mortality crisis

Although the causes of this prolonged period of heightened mortality remain uncertain, it is possible to investigate some of its effects by further analysis of the parish registers and Compton Census of 1676 for Broughton township.

The relationship between burials, baptisms and marriages during the crisis years reveals broad trends that may help to explain the demographic response to crisis (Figure 4). The peak years of mortality crisis, 1667 and 1670, coincided

Figure 4 Baptisms and burials in Broughton, 1661–1680



with a marked increase in the number of marriages. As these crises affected adults more severely than children, economic opportunities undoubtedly presented themselves for young adults from Broughton to marry and form their own household or for migrants to take the place of the deceased. Indeed, if the marriages represent economic opportunism as opposed to re-marriage prompted by domestic pragmatism then this was a remarkably rapid response to the crisis. Nevertheless, considerable additional work would be necessary to investigate whether or not the rate of re-marriage increased during and after the crisis years, although it remains a possibility that rapid re-marriage contributed to the peak in marriages. Few of the 1667 marriages led to recorded baptisms within 18 months, and only a full reconstitution would determine the extent and rate of re-marriage. Consequently, the synchronisation of the peaks in marriages and baptisms is not immediately explicable. As the numbers of marriages and baptisms are low, with just a handful of recorded marriages and baptisms in most months throughout the crisis, seasonal analysis is meaningless. Furthermore, the peak in marriages in 1670 coincided with a declining number of baptisms, and the low number of marriages in 1672–1676 does not suggest that the population was being replenished in these years through the formation of new households. Recorded baptisms show a marked peak in 1667 and a decline to a significant trough in 1672, the final year of crisis. However, the low point in 1672 may be directly linked to the peak in burials and is consistent with an outbreak of measles. Indeed, 1672 is the only year in which a stillborn child is recorded in the Broughton burial registers, and other unnamed children appear in the burial register at this time. Despite the low number of marriages after 1672, the number of recorded baptisms shows a marked increase up to 1680, during which time the mortality regime

Table 5 The number of burials recorded for each of the 120 surnames in the Broughton parish register, 1667–1672

| No. of burials | No. of surnames 1661–1666 | % of surnames 1661–1666 | No. of surnames 1667–1672 | % of surnames 1667–1672 |
|----------------|------------------------------|----------------------------|------------------------------|----------------------------|
| 1 | 47 | 61.8 | 47 | 39.2 |
| 2 | 12 | 15.8 | 24 | 20.0 |
| 3 | 8 | 10.5 | 19 | 15.8 |
| 4 | 4 | 5.3 | 9 | 7.5 |
| 5 | 2 | 2.6 | 5 | 4.2 |
| 6 | 1 | 1.3 | 5 | 4.2 |
| 7 | 2 | 2.6 | 1 | 0.8 |
| 8 | - | | 2 | 1.7 |
| 9 | - | | - | |
| 10 | - | | - | |
| More than 10 | - | | 8 | 6.7 |
| Total | 76 | 100 | 120 | 100 |

Source: Broughton parish registers

returned to normal. This is suggestive of demographic recovery and population growth in the immediate post-crisis years.

In the absence of a reconstitution study it is impossible to be precise about the impact of the mortality crisis on individual families. Indeed, as the registers only begin in 1653 it would not be possible to reconstitute the population in order to produce meaningful data on age-specific mortality rates, family size or kinship density. However, the surname distribution of burials is suggestive of the potential impact of mortality crisis on family groups. Table 5 shows that of the 120 surnames represented in the burial register during the years of crisis, 39 per cent were mentioned just once, with a further 20 per cent entered on two occasions and 16 per cent entered on three occasions. Comparison with the six years preceding the crisis shows that in those years 62 per cent of surnames were entered just once, 16 per cent entered twice, and 10 per cent on three occasions. In the crisis years, 75 per cent of surnames were recorded on three or fewer occasions, with the corresponding figure for the pre-crisis years being 88 per cent. Clearly, the mortality crisis caused an increased in the number of surnames in the burial register, and an increase in frequency, but unless these deaths were all concentrated in small families, it would appear that the majority of surname groups, and the majority of families, were not severely affected by the crisis.

We can take this analysis further. In their article on plague in Penrith in 1597–1598, Scott, Duncan and Duncan examined the progress of disease within and between families. They demonstrated that once plague had infected one member of a household it quickly spread to other members of the same household, often claiming several lives in a short space of time before moving

on to the next family.⁴⁸ A similar, though much simplified, methodology has been applied to the Broughton burial registers, using surnames rather than reconstituted family groups as the basis of analysis. No claim is being made that they were nuclear families or even co-resident extended families, but it is suggested that at least some of the people with a shared surname in a small community such as Broughton would have been related to each other, and might be taken as a proxy for family groups.

Applying this methodology to Broughton reveals a markedly different pattern from that reported for Penrith. In Broughton, few 'families' experienced a cluster of deaths in quick succession, and the pattern of mortality within surname groups appears to have been much more random. Bearing in mind that three fifths of surnames were recorded in the burial register on only one or two occasions between 1667 and 1672, the impact on individual families must have been relatively slight. Of the more frequently-mentioned surnames a general pattern of intermittent mortality characterises the data. The Beckett 'family', for instance, experienced five deaths during the crisis, scattered between January 1667 and February 1671. Five Clarkson burials were recorded between January 1667 and November 1670, three of which—Henry, Grace his wife and Ellin his daughter—were buried within eight months in 1670. The Curwens experienced seven deaths scattered between September 1667 and March 1672, including Margaret and Robert, wife and son of John, who were buried within three weeks of each other in October 1669. Analysis is slightly hampered by the fact that the registers refer to a larger population than the Compton Census, but of the three families above, only the Clarksons, with one family of eight, appear in the 1676 returns. In terms of the structure and functionality of individual families, therefore, the mortality crisis was probably not perceived as a sudden, high impact, catastrophe of the type seen in Penrith in the 1590s. Indeed, the heightened mortality of Broughton between 1667 and 1672 was more of a persistent problem that may have temporarily destabilised an individual family by the loss of a child, carer or breadwinner, but did not cause particularly rapid change in household structure or in family relationships.

This argument is further highlighted by extracting identifiable families from the surname groups. In 1676, the Charnleys occupied two households in Broughton township with 12 Charnley burials in the period between October 1667 and September 1672. These 12 burials comprised seven children, three adult females and two adult males. However, these individuals were exclusively recorded as from Barton or Haighton, and affected six distinct families. The Singletons are another example. In 1676, 13 Singletons were spread across four households in Broughton township, yet 20 Singletons were buried between October 1667 and March 1672, comprising nine children, eight adult women and three adult men, with particular concentrations at the time of peak mortality. Nevertheless, these burials affected at least 12 identifiable families. Only the family of Richard Singleton of Highgate Lane was particularly unfortunate. Richard married Ellen Walker in June 1668; she was buried on 1 November 1670, followed by an unnamed child on 14 December. Three more of his children—Henry, Margaret and William—were buried

within nine days of each other in March 1672, when Richard himself was described as a pauper. A Richard Singleton appears as a recusant in the Compton Census, along with Elizabeth his wife and three children, Edward, George and Margaret, although it is not clear if this is the same individual, as the Broughton registers do not record the marriage of Richard and Elizabeth, and the baptisms of the three children found in the Compton Census are not recorded.

Further examples of multiple burials from surname groups could be given, but in a further attempt to indirectly measure the experience of mortality crisis within family groups, an alternative approach has been adopted. The preceding analysis of surname groups experiencing multiple burials during the period of crisis is dependent upon the population at risk, and surname groups are not representative of family groups. Indeed, the more common a surname the much greater likelihood that burials of individuals with the same surname took place in quick succession, and this does not necessarily tell us very much about the progress of the crisis within family groups. Indeed, as has been demonstrated, surname groups are not a sufficiently robust proxy for families. In order to investigate the potential impact of the crisis on individual families in a slightly different way, and in an attempt to minimise the extent to which common surnames dominate the analysis, the burial interval between individuals of the same surname was measured, comparing the period 1661–1666 with 1667–1672. Excluding servants, 90 per cent of households in 1676 contained only one surname, and although some of these surnames were common to more than one household, the interval between burials of individuals with the same surname could be taken as a proxy for the *minimum* interval between burials of members of the same household. The results of this analysis are presented in Table 6.

Table 6 demonstrates that the mean interval between burials of individuals with the same surname was significantly reduced during the years of crisis, but was never less than 240 days, or about 8 months. The median burial interval was actually shorter before the crisis than it was during the crisis years, and the overall proportion of burials of two or more individuals with the same surname occurring within 28 days of each other was just 12.5 per cent.⁴⁹ Despite the fact that a full reconstitution has not been carried out, this analysis provides confirmation that the mortality crisis did not decimate families, and nor was it common for individual families to experience several burials in quick succession.

Household structure

Despite the general lack of clustering of burials within families at times of peak mortality, it might be expected that a crisis which claimed the lives of between one quarter and one third of the population of Broughton township might have had an effect upon the household structure of the community. Indeed, it might be expected that mortality crisis would have resulted in a greater proportion of laterally and vertically extended households as a direct response to demographic collapse. This is especially so when, as demonstrated above, the

Table 6(a) Burial interval, Broughton, 1667–1672

| | Interval between burials within surname groups | | | |
|----------------------------------|--|---------|---------|---------|
| | 1 and 2 | 2 and 3 | 3 and 4 | 4 and 5 |
| N= | 61 | 32 | 21 | 14 |
| Mean burial interval (days) | 475 | 371 | 244 | 243 |
| Median burial interval | 313 | 356 | 194 | 176 |
| Number of burials within 28 days | 4 | 3 | 6 | 3 |

Table 6(b) Burial interval, Broughton, 1661–1666

| | Interval between burials within surname groups | | | |
|----------------------------------|--|---------|---------|---------|
| | 1 and 2 | 2 and 3 | 3 and 4 | 4 and 5 |
| N= | 29 | 17 | 9 | 5 |
| Mean burial interval (days) | 642 | 382 | 430 | 284 |
| Median burial interval | 440 | 178 | 269 | 55 |
| Number of burials within 28 days | 4 | 2 | 2 | 1 |

Source: Broughton parish registers

mortality crisis affected the majority of families, but appears not to have obliterated entire families which could have been replaced by new conjugal units. Indeed, extended households might have been the product of the death or incapacity of key family members: orphaned children might find themselves living with aunts, uncles or grandparents; the poor and infirm might find themselves living with able-bodied relatives; widows and widowers might find themselves living with relatives in order to provide emotional and economic support. The number of solitaires and couples without children might be inflated by the death of spouses and offspring. Nevertheless, there is considerable difficulty in identifying some complex households. Re-marriage and adopted orphans, for instance, can be impossible to detect in population listings, and can only be identified following considerable reconstruction work. Servants, also, may actually be hidden kin, as has been demonstrated for the nineteenth century.⁵⁰

Slack has argued that poverty was often a more serious consequence of plague outbreaks due to a combination of death, morbidity, and the interruption of trade. The Broughton evidence suggests that contemporaries believed Broughton to be ‘overburthened with poore’ during the crisis years.⁵¹ There is nothing unusual in overseers claiming their parish to be encumbered with a pauperised population, but the frequency with which such statements are found should not detract from the essential fact that they may be based in truth, and not simply a convenient argument to place before the magistrate’s bench. Quarter Sessions petitions from the years of crisis are certainly indicative of poverty, sickness and complex domestic arrangements resulting

from death and desertion, comparable with poor law orders made in nearby Garstang in the early nineteenth century.⁵² Broughton petitions and relief orders increased during the crisis from six orders between Midsummer 1662 and Epiphany 1666/7 to 13 orders between Easter 1667 and Easter 1672, falling to five orders between Easter 1674 and Easter 1679.⁵³ However, it must also be noted that these only relate to a minority of the population and a small number of families repeatedly came to the attention of the magistrates. These families were clearly struggling to make ends meet either through their own fecklessness or misfortune, but whether this evidence allows us to make more general conclusions remains to be seen. Nevertheless, the Quarter Sessions evidence is worthy of some discussion, not least because of the light it sheds on the impact of the mortality crisis in particular cases.

The evidence for sickness, despite its rarity, is confirmation that the observed mortality crisis is not the result of fluctuations in registration. At the Michaelmas sessions, 1671, it was said of Elizabeth Ranald that 'through devine pvidence [sic] is become poore and by continuall sicknesse is so infirme in bodie that shee is wholie disabled to releve herself [sic]'. However, she was described as 'old', which may of course explain her infirmity, but she was thought to be unlikely 'ever to bee restored to anie such measure of strength as to give anie thinge towards her livelihood by her labours [sic]'.⁵⁴ At the Easter sessions, 1671, John Clarkson petitioned for relief on the grounds that he had a wife and six children, none of whom were able to work. John himself was 'through sickness much disinabled to follow any work' a situation that was not helped by his 'lame daughter who is not able to doe anything, much less begg [sic]', although this may have been a long-term condition.⁵⁵ At the Preston sessions held at Easter 1670, Elizabeth Livesay, a tabler with Richard Wilkinson, was said to have been 'lately visited wth a very sever sicknes whereby she is reduced to very much weaknes and inabylyty of body to get abroad to ... beg any releefe [sic]'.⁵⁶

In these and in other cases, morbidity led to poverty, and petitions for relief followed. Other petitions for relief were not specifically linked to sickness, but are nevertheless indicative of economic dislocation which was frequently the cause of complex domestic structures.

Henry Singleton left Broughton for London in 1666, leaving his wife, Alice, and two sons, Andrew and James, destitute. Alice petitioned the Quarter Sessions at Easter 1667, asking them to provide a suitable 'place of habitation'. However, in the summer of 1667 Alice went to London to join her husband, boarding out her two children for six months with Ellen Arthwright. By Midsummer 1668 neither parent had returned, and, although the children were still in the care of Ellen Arthwright, no financial provision had been made for their upkeep. Henry Singleton, the father, was owed a total of £6 10s. by several local people, and the children had also been left a legacy of £7 by James Fletcher. Although the children were being maintained 'by the town', the overseers and churchwardens petitioned Quarter Sessions to get an order for the executors and debtors to pay for the upkeep of the children, who were, apparently, complicit. The Overseers' petition was repeated in 1671 and at

Easter 1672 Ellen Arthwright petitioned to be reimbursed 53s. by the Overseers for the 'table wages' of the two children.⁵⁷

Further cases show the experience of individual families, or shed light on the household structure contained within the Compton Census. A settlement examination of 1677/8 for Henry Walmesley, for instance, shows that he was a journeyman tailor, and that his presence in his brother's household in 1676 was merely a temporary measure and not a consequence of the mortality crisis.⁵⁸ The relief order for the orphans of Lawrence Tomlinson, however, was issued some eight years after the death of their parents. Lawrence was buried in November 1670, with his widow Anne following in January 1671. However, it was not until Easter 1679 that an order was made for their maintenance.⁵⁹ It is not clear how the children had been maintained in the intervening years, but in 1676 there was a Lawrence Tomlinson resident as a servant in the household of Richard Goodshaw, with the only other household member being a female servant, Anne Turner.

Table 7 shows the household structure in Broughton in 1676, calculated from the Compton Census. The average household size of 3.6 is below the 4.75 average for England suggested by Laslett, but does lie within an acceptable range suggested by Arkell and is similar to the poorest of the Cambridge parishes, and labouring households, examined by Goose.⁶⁰ The table shows the dominance of the nuclear family with over 80 per cent of families falling into the third class (simple households). Solitaries formed around 12 per cent with extended and multiple families forming around 6 per cent. Apart from the low average household size, there is no evidence that household structure in Broughton was significantly affected by the mortality crisis. Indeed, although the Quarter Sessions evidence does suggest that mortality crisis could lead to complex household structures, the few examples cited above are an insufficient basis for a more general argument. Indeed, basing an assessment of household structure on these and similar cases alone would be grossly misleading. Analysis of the Compton Census demonstrates that they are not the tip of an iceberg, but are exceptions to the general pattern which saw the nuclear family dominate in Broughton, just as it did in other early modern communities facing the ravages of disease and concomitant socio-economic dislocation.

Nevertheless, in order to fully assess the impact of mortality crisis on household structure we would need either a pre-crisis census comparable with the Compton Census or a sophisticated modelling technique that would enable us to reconstruct a hypothetical community structure. In the absence of these the remaining option is to compare Broughton with other pre-industrial communities. In Ealing, Middlesex, nuclear families formed 78 per cent of all families, solitaries 12 per cent with extended and multiple families forming 8 per cent in 1595.⁶¹ Chaytor's work on Ryton, Co. Durham, shows that nuclear families formed 60 per cent of all households, with 12 per cent solitaries, 12 per cent extended and 16 per cent indeterminate in 1595.⁶² Further individual communities could be cited for comparative purposes, but it is possible to offer some comparisons between Broughton and a sample of 100 pre-industrial English communities, 1574–1821, as reported by Laslett.⁶³

Table 7 Household structure in Broughton, 1676

| Household type | Code | Households | | Average household size |
|---|------|------------|------|------------------------|
| | | No | % | |
| 1. Solitaries | | | | |
| Widowed | 1a | 7 | 7.2 | 1.3 |
| Single, or of unknown marital status | 1b | 5 | 5.2 | 1.4 |
| 2. No conjugal family | | | | |
| Co-resident siblings | 2a | 1 | 1.0 | 2 |
| Co-resident relatives of other kinds | 2b | - | - | - |
| 3. Simple family households | | | | |
| Married couple alone | 3a | 15 | 15.5 | 2.4 |
| Married couple with never-married child(ren) | 3b | 40 | 41.2 | 4.6 |
| Widowers with never-married child(ren) | 3c | 5 | 5.2 | 3.8 |
| Widows with never-married child(ren) | 3d | 18 | 18.6 | 3.2 |
| 4. Extended family households | | | | |
| Extended upwards from head | 4a | - | - | - |
| Extended downwards from head | 4b | 5 | 5.2 | 5 |
| Extended laterally from head | 4c | - | - | - |
| Combinations of types 4a-4c | 4d | - | - | - |
| 5. Multiple family households | | | | |
| Secondary unit(s) disposed upwards from head | 5a | - | - | - |
| Secondary unit(s) disposed downwards from head | 5b | 1 | 1.0 | 9 |
| Units all on one level | 5c | - | - | - |
| Units all on one level, but with no member of the parental generation present | 5d | - | - | - |
| Combinations of types 5a-5d | 5e | - | - | - |
| 6. Indeterminate | | | | |
| Total | 97 | 100 | 3.59 | |

Note: Household classifications are based on P. Laslett ed., *Household and family in past time*, p. 31.

Source: Broughton Compton Census, Lancs R.O. ARR 31

We have already established that household size in Broughton township in 1676 was low, at just 3.6. It is therefore not surprising to see that solitaries were twice as common in Broughton as in other pre-industrial communities, and that 63 per cent had four or fewer members against 48 per cent of Laslett's sample (Table 8). However, in terms of the sex ratio and the marital status of males in the population there are no significant differences between Laslett's sample and the Broughton evidence (Table 9). However, the position of females shows some significant differences, particularly in the proportion of single females, which were less common in Broughton, and widowed females,

Table 8 Proportion of households of sizes 1 to 10 and over

| Household size | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 10+ |
|-----------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 91 communities 1564–1821 | 6.02 | 14.75 | 16.72 | 15.69 | 14.62 | 11.69 | 7.91 | 5.32 | 2.91 | 1.74 | 4.36 |
| Broughton 1676 | 11.34 | 17.53 | 28.87 | 16.49 | 10.31 | 7.22 | 3.09 | 3.09 | 2.06 | - | - |

Source: Broughton data from Compton Census, Lancs R.O. ARR 31; 1574–1821 figures from P. Laslett, 'Size and structure of the household over three centuries', *Population Studies*, **23** (1969), p. 212

Table 9 Population by sex and marital status, English communities and Broughton

| | English communities 1574–1821 | Broughton, 1676 |
|-------------------------------|----------------------------------|-----------------|
| Sex ratio (M:F) | 91.3:100 | 96.6:100 |
| Proportion married | 33.4 | 34.2 |
| Proportion widowed | 6.2 | 8.9 |
| Proportion single | 60.4 | 56.9 |
| Proportion of males married | 34.8 | 34.5 |
| Proportion of males widowed | 3.5 | 3.5 |
| Proportion of males single | 61.7 | 61.9 |
| Proportion of females married | 32.1 | 33.9 |
| Proportion of females widowed | 8.7 | 14.1 |
| Proportion of females single | 59.2 | 51.9 |

Source: Broughton data: Lancs R.O. ARR 31 ; 1574–1821 figures from Laslett, 'Size and structure of the household', 215. The sex ratio is based on 70 communities, the proportions are based on 61 communities.

who formed a significantly higher proportion of the adult female population of Broughton than in other pre-industrial communities.

Comparison of the child populations shows that the proportion of children in the population was virtually identical, albeit with a markedly different sex ratio (Table 10). The proportion of households with children was only slightly lower in Broughton, but the sibling groups were generally considerably smaller here than elsewhere. Indeed, while only 30 per cent of sibling groups in pre-industrial communities contained either one or two children, over 45 per cent of sibling groups in Broughton were of this size (Table 11).

On this evidence, Broughton township in 1676 appears to have been fairly typical of English communities in this period, albeit with an average household size below the national average. Nevertheless, what is not yet fully clear is whether or not the typical structure but low household size represented something of a recovery in the period 1672–1676, or whether it is simply a reflection of the scale and demographic impact of the mortality crisis.

Table 10 Children in the population

| | English communities, 1574–1821 | Broughton, 1676 |
|--|--------------------------------|-----------------|
| Proportion of children in the population | 42.6 | 42.5 |
| Sex ratio of children (males:females) | 91.4:100 | 117.4:100 |
| Proportion of households with children | 74.6 | 70.1 |

Source: Broughton data: Lancs R.O. ARR 31 ; 1574–1821 figures from Laslett, 'Size and structure of the household', 215. The proportion of children and proportion of households with children are based on 66 communities; the sex ratio is based on 61 communities.

Table 11 Sibling groups, English communities 1574–1821 and Broughton, 1676

| Proportion of children in groups of: | 66 English communities 1574–1821 | Broughton, 1676 |
|--------------------------------------|----------------------------------|-----------------|
| One | 11.2 | 15.1 |
| Two | 18.4 | 30.3 |
| Three | 23.1 | 25.7 |
| Four | 18.1 | 13.2 |
| Five | 13.4 | 3.3 |
| Six | 7.7 | 7.9 |
| Seven | - | 4.6 |
| More than seven | 7.2 | - |

Source: Broughton data: Lancs R.O. ARR 31 ; 1574–1821 figures from Laslett, 'Size and structure of the household', 217.

To develop this argument still further, we can investigate the longevity of the presence of surnames through the parish registers and the Compton Census. As the Compton Census records all individuals in Broughton township in 1676, this provides us with an opportunity to estimate how many of those families were new migrants appearing during or after the mortality crisis as the community was recovering. Of the 81 surnames in the Broughton Compton Census, 51 (63 per cent) were recorded in the registers before the first year of the mortality crisis. One surname first appears in a burial record of 1673 and one as a baptism in 1676. In addition two surnames appear for the first time as baptisms during the years of crisis with a further three first appearing as burials during the crisis. This is not suggestive of a significant wave of in-migrants due to the mortality crisis. On the other hand, 18 surnames (22 per cent) do not appear in the parish registers at all between 1653 and 1676, although they were clearly resident in Broughton in 1676. Nevertheless, these 18 surnames represent only 35 individuals, or 10 per cent of the township population. Thirteen of these individuals were servants, one was indeterminate, leaving only 21 individuals (6 per cent of the population) who appear to be 'permanent' incomers to the community. This is further backed up by the fact that no new surnames appear in the Broughton registers due to marriages between 1666 and 1676, indicating clearly that the number of

incomers was only small, and that they were either married before they became resident in Broughton, or if not that the marriages took place elsewhere.

Conclusions

The conclusions to be drawn from this study must remain tentative, as it is apparent that a much more detailed study needs to be carried out, taking full advantage of nominal record linkage techniques and a wider range of primary source material. Nevertheless, this study has demonstrated several key aspects of demographic change in Broughton in the ten years before the Compton Census. It is apparent that there was not one mortality crisis, but a series of three—possibly linked—crises in 1667, 1670 and 1672. Each peak in burials affected a different part of the population and the seasonal distribution of burials also varied. This suggests that the mortality crises had more than one cause. However, it is also apparent that families had varied experiences of mortality in this period, with a minority suffering several burials in quick succession, others experiencing burials scattered throughout the years of crisis, and the majority being only slightly affected. This may be related to the demographic and economic structure of individual families: the poor, and families with large numbers of ‘vulnerable’ individuals such as the very young or the elderly, might have been more susceptible to the effects of malnourishment and disease. Nevertheless, it is clear that the crisis did not lead to significant waves of inwards migration, although the early years of the crisis were also notable for an increase in marriages. Some of these marriages could be accounted for by re-marriage, but it is undoubtedly the case that new households were formed in the wake of heightened mortality as young adults took advantage of the opportunities opened up by the peaks in mortality in 1667 and 1670. These years had witnessed the deaths of large numbers of adult males and females, as well as seeing an increased number of marriages and a peak in the number of baptisms in the first year of crisis. It could be argued that this caused a change in the age structure of the population, with an increase in the proportion of infants and young children, which left Broughton susceptible to further demographic collapse in April 1672, and a significant peak in child burials in that year. The number of recorded baptisms increased in the years immediately following the crisis, although burials continued to exceed baptisms.

In terms of household structure, comparison with other studies of pre-industrial English communities suggests that the mortality crisis had little impact, although it is likely that the population decline was a contributory factor to the low average household size in 1676. Indeed, this may reflect the large numbers of child deaths and the high number of recent marriages, resulting in an increased number of incomplete families in Broughton in 1676. The number of solitaires in the Broughton population was significantly higher than in Laslett’s sample parishes, as was the proportion of widows and widowers. Nevertheless, given the diversity of Cambridge c. 1630, Broughton c. 1676, and 100 communities 1574–1821, the broad uniformity of household

composition requires some explanation. Indeed, the general similarity could call into question the validity of population listings as a source of measuring household structure, as King has suggested.

Further evidence needs to be brought to bear on this issue, especially for pre-industrial communities, but we might consider the possible motivations for individuals and families to respond to crisis by clustering and forming complex households. For orphaned children, the answer is obvious enough, and such children may have found themselves living with kin or being farmed out to the wider community. However, the demographic impact of the mortality crisis was such that few children were orphaned during this period. Even in cases of orphaned children, or where families lost one parent leaving the survivor unable to cope, farming children out to kin and community was not the only option. Such children might just as easily be put into service in neighbouring communities, or apprenticed into nearby Preston. In this respect, the proximity of Preston could have acted as a safety-valve, releasing pressure from within Broughton by placing orphans and children from large or poor families and, in so doing, indemnifying the Broughton overseers against future demands for relief. The motivation for forming complex families may have come from the pooling of resources to lessen the financial burden on the family group. However, if Broughton was overburdened with poor, as the overseers claimed, then there is little advantage in simply creating larger units of paupers who did not have the resources to provide mutual support. Some reduction in expenditure could have been gained from the sharing of rent and fuel costs, but during a period of economic stagnation and demographic collapse, there was likely to be deflationary pressure on rents anyway. The number of households in Broughton increased from 84 in 1664 to 97 in 1676, but the low mean household size suggests that there was little pressure on the housing stock. This might also have led to deflationary pressure on rents.

The broad similarities between Broughton, Cambridge and Laslett's sample could suggest that the sources may be concealing as much as they reveal. Certainly Cambridge in the 1630s had little in common with Broughton in the 1670s. Nevertheless, it may well be that Broughton had 'recovered' from the effects of mortality crisis by 1676, and that a temporary, but invisible, phase of more complex domestic composition had come to an end. This seems unlikely, although to measure the impact of mortality crisis on household structure with any certainty a series of population listings would need to be available—taken before, during and in the immediate aftermath of peak mortality—and a full reconstitution of the population would need to be carried out. Nevertheless, the small household size, high proportion of widow(er)s in the population and small size of sibling groups in Broughton are all entirely consistent with a community still feeling the effects of the mortality crisis. At the same time, the fact that the nuclear family dominated Broughton in 1676 is testament to the durability of that form of household structure in England. Indeed, despite the demographic and economic disruption of the crisis years, it seems that few families responded by fundamentally altering their household composition. Even if families had experienced a temporary phase of complexity, this had

ended by 1676, showing just how transitory such phases were. Moreover, it is unlikely that in the aftermath of the trauma of a mortality crisis the community had the desire to reconfigure itself twice in quick succession, firstly by creating complex households, and then quickly returning to 'normality'. The more logical conclusion is that such reconfigurations did not take place in anything other than a very small number of cases. The few cases of complex families during the crisis years evidenced by the Quarter Sessions petitions are unlikely to signify a larger-scale response to crisis. Indeed, the evidence for the domination of the nuclear family in Broughton is unequivocal and to study household structure without access to a detailed population listing would be very misleading indeed

NOTES.

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2. R. Humphreys, 'Mortality Crises in sixteenth-century Dorking', *Local Population Studies*, **39** (1987), 46–53; M. Long and M. Pickles, 'An enquiry into mortality in some mid-Wharfedale parishes in 1623', *Local Population Studies*, **37** (1986), 19–35; I. Nelson and J.L. Nelson, 'Famine and mortality crises in mid-Sussex, 1606–1640', *Local Population Studies*, **46** (1991), 39–49; P. Race, 'Some further consideration of the plague in Eyam, 1665/6', *Local Population Studies*, **54** (1995), 56–65; S. Scott and C.J. Duncan, 'The mortality crisis of 1623 in north-west England', *Local Population Studies*, **58** (1997), 14–25; J. Skinner, 'Crisis mortality in Buckinghamshire 1600–1750', *Local Population Studies*, **28** (1982), 67–77.
3. M. Drake ed., *Population studies from parish registers: a selection of readings from Local Population Studies* (Matlock, 1982); R.S. Schofield, *Parish register aggregate analyses: the Population History of England database and introductory guide* (Colchester, 1988).
4. See for example T. Arkell, and A. Whiteman, 'Mean household size in mid-Tudor England: Clackclose Hundred, Norfolk', *Local Population Studies*, **60** (1998), 20–33; R.A. Houston, 'Parish listings and social structure: Penninghame and Whithorn (Wigtownshire) in perspective', *Local Population Studies*, **23** (1979), 24–32; J.M. Martin, 'The rich, the poor and the migrant in eighteenth century Stratford-on-Avon', *Local Population Studies*, **20** (1978), 38–48; T. Sokoll, 'The household position of elderly widows in poverty: evidence from two English communities in the late eighteenth and early nineteenth centuries', in J. Henderson and R. Wall eds, *Poor women and children in the European past* (London, 1994), 207–24; T. Sokoll, *Household and family among the poor: the case of two Essex communities in the late eighteenth and early nineteenth centuries* (Bochum, 1993). For a guide to the availability of pre-census listings, see: C. Chapman, *Pre-1841 censuses and population listings in the British Isles* (4th edn, Dursley, 1994); J. Gibson, and M.T. Medlycott eds, *Local census listings, 1522–1930: holdings in the British Isles*, (2nd edn, Birmingham, 1992).
5. S.A. King, 'The English protoindustrial family: old and new perspectives', *The History of the Family*, **8** (2003), 21–43; G. Timmins, *Made in Lancashire: a history of regional industrialisation*, (Manchester, 1998); J.K. 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.
6. P. Laslett, 'Size and structure of the household over three centuries', *Population Studies*, **23** (1969), 199–223.
7. N. Goose, 'Household size and structure in early Stuart Cambridge', *Social History*, **5** (1980), 347.
8. P. Laslett, 'Family, kinship and collectivity as systems of support in pre-industrial Europe: a

- consideration of the 'nuclear hardship' hypothesis', *Continuity and Change*, **3** (1988), 153–75; P. Laslett and R. Wall eds, *Household and family in past time: comparative studies in the size and structure of the domestic group over the last three centuries in England, France, Serbia, Japan, and Colonial North America, with further materials from Western Europe*, (London, 1972).
9. M. Anderson, *Family structure in nineteenth century Lancashire* (Cambridge, 1970); D. Cooper and M. Donald, 'Households and "hidden" kin in early nineteenth-century England: four case studies in suburban Exeter, 1821–1861', *Continuity and Change*, **10** (1995), 257–78; M. Dupree, *Family structure in the Staffordshire potteries, 1840–1880*, (Oxford, 1995); R. Lawton, 'Peopling the past', *Transactions of the Institute of British Geographers*, New Series, **12** (1987), 259–83; B. Reay, 'Kinship and the neighborhood in nineteenth-century rural England: the myth of the autonomous nuclear family', *Journal of Family History*, **21** (1996), 87–104.
 10. M. Chaytor, 'Household and kinship: Ryton in the late 16th and early 17th centuries', *History Workshop Journal*, **10** (1980), 25–60; O. Harris, 'Households and their boundaries', *History Workshop Journal*, **13** (1982), 143–52; King, 'English protoindustrial family'; S.R. Ottaway, 'Providing for the elderly in eighteenth-century England', *Continuity and Change*, **13** (1998), 391–418; T. Sokoll, 'The pauper household: small and simple? The evidence from listings of inhabitants and pauper lists in early modern England', *Ethnologia Europaea*, **27** (1985), 25–42.
 11. King 'English protoindustrial family', 23.
 12. King, 'English protoindustrial family', 38.
 13. Laslett, 'Family, kinship and collectivity', 160.
 14. Goose, 'Household size and structure', 352–3.
 15. T.S. Willan, 'Plague in perspective: the case of Manchester in 1605', *Transactions of the Historic Society of Lancashire & Cheshire*, **132** (1983 for 1982), 29–40.
 16. P. Slack, *The impact of plague in Tudor and Stuart England*, (Oxford, 1990), 188.
 17. A. Appleby, *Famine in Tudor and Stuart England* (Liverpool, 1978).
 18. K. Wrightson and D. Levine, 'Death in Whickham' in J. Walter and R. Schofield eds., *Famine, disease and the social order in early modern society* (Cambridge, 1991), 156.
 19. S. Scott, C.J. Duncan and S.R. Duncan, 'The plague in Penrith, Cumbria, 1597/8: its causes, biology and consequences', *Annals of Human Biology*, **23** (1996), 1–21.
 20. Slack, *Impact of plague*, 177.
 21. Goose, 'Household size and structure', 355.
 22. Goose, 'Household size and structure', 380–5.
 23. W. Farrer and J. Brownbill eds, *A history of the County of Lancashire*, **7** (1912), 117–28.
 24. A. Whiteman, 'The protestation returns of 1641–1642: part 1, the general organisation', *Local Population Studies*, **55** (1995), 14–26; A. Whiteman, 'The protestation returns of 1641–1642: part 2, partial census of snapshot? Some evidence from Penwith hundred, Cornwall', *Local Population Studies*, **56** (1996), 17–29.
 25. See T. Arkell, 'Multiplying factors for estimating population totals from the Hearth Tax', *Local Population Studies*, **28** (1982), 51–7.
 26. Calculated from E.A. Wrigley and R.S. Schofield, *The population history of England 1541–1871: a reconstruction* (London, 1981), Table A3.1, 528.
 27. A. Whiteman, 'The Compton census of 1676', in K. Schürer, and T. Arkell eds, *Surveying the people: the interpretation and use of document sources for the study of population in the later seventeenth century* (Oxford, 1992), 78–96; A. Whiteman ed., *The Compton Census of 1676: a critical edition* (Oxford, 1986).
 28. The Broughton returns are located in the Archdeaonry of Richmond deposit at the Lancashire Record Office, ARR 31. See also Whiteman, *Compton Census*; Schurer and Arkell, *Surveying the people*; A. Whiteman, 'The use of the Compton census for demographic purposes', *Local Population Studies*, **50** (1993), 61–6.
 29. Farrer and Brownbill, *History of Lancashire*, 117–24; H. Fishwick ed., *Lancashire and Cheshire church surveys, 1649–1655* (Record Society of Lancashire and Cheshire, 1879); A.E. Hodder ed., *The registers of the parish church of Broughton, near Preston* (Lancashire Parish Register Society, 1913).
 30. Farrer and Brownbill, *History of Lancashire*, 118.
 31. Drake, *Population studies from parish registers*; Schofield, *Parish register aggregate analyses*.
 32. For a discussion of nominal record linkage see G. Morton, 'Presenting the self: record linkage and

- referring to ordinary historical persons', *History and Computing*, **6** (1994); S. King, 'Power, representation and the historical individual: problems with sources for record linkages in two Yorkshire townships, 1650–1820', *Local Historian*, **25**, (1997), 78–90.
33. Census of Great Britain, 1831. Abstract of the answers and returns made pursuant to an Act, passed in the eleventh year of the reign of His Majesty King George IV, intituled 'An Act for taking an account of the population of Great Britain, and of the increase or diminution thereof.' Enumeration Abstract Vol I., 1831 BPP 1833, XXXVI (149), 286.
 34. H.B. Rodgers, 'The market area of Preston in the 16th and 17th centuries', *Geographical Studies*, **3** (1956), 46–55; D. Hunt, *History of Preston*, (Preston, 1992).
 35. A.J. Gritt, 'The survival of service in the English agricultural labour force: lessons from Lancashire', *Agricultural History Review*, **50** (2002), 25–50.
 36. A.B. Appleby, 'Disease or famine? Mortality in Cumberland and Westmorland 1580–1640', *Economic History Review*, **26** (1973), 403–32; C.D. Rogers, *The Lancashire population crisis of 1623*, (Manchester, 1975); Scott and Duncan, 'Mortality crisis of 1623', 14–25.
 37. C.B. Phillips and J.H. Smith, *Lancashire and Cheshire from AD 1540*, (London, 1994), 10–11.
 38. J.K. Walton, 'Proto-industrialisation and the first industrial revolution: the case of Lancashire', P. Hudson ed, *Regions and Industries*, (Cambridge, 1993), 49; B.W. Beckingsale, 'The characteristics of the Tudor North', *Northern History*, **4** (1969), 70.
 39. B.G. Blackwood, 'Plebeian Catholics in later Stuart Lancashire', 164–6; Gritt, 'The survival of service', 35.
 40. R. Schofield, '"Crisis" mortality', *Local Population Studies*, **9** (1972), 10–22.
 41. E.A. Wrigley and R.S. Schofield, *The population history of England 1541–1871: a reconstruction*, (London, 1981), appendix 10, 'Local mortality crises', 645–85.
 42. It is impossible to know the exact proportion. Adding the 119 Broughton burials to the 348 individuals enumerated in Broughton township in 1676, results in a total population of 467. The 119 burials amount to one quarter of this population. However, this does not take into account people enumerated in 1676 as infants, or recent in-migrants. The population estimate for 1664 cited above was 360, therefore the 119 burials represent approximately one third of the pre-crisis population. Nevertheless, this proportion is suggestive only of the likely scale of the crisis and should not be taken to represent precision.
 43. Laslett and Wall, *Household and family in past time*, 86.
 44. Excluding 1659 and 1660 when only one burial was recorded.
 45. Wrigley and Schofield, *Population history of England*, 334, 660. The 'national' crisis of 1665/6 was largely confined to the south-east of England.
 46. S. Watts, 'Some aspects of mortality in three Shropshire parishes in the mid-seventeenth century', *Local Population Studies*, **67** (2001), 11–25.
 47. The 43 parishes were: Bunbury, Chester, Frodsham, Nantwich and Sandbach (Cheshire); Crosthwaite and Greystoke (Cumberland); Dronfield and Wirksworth (Derbyshire); Darlington and Whitburn (Durham); Ashton under Lyne, Hawkshead, North Meols, Radcliffe, Tunstall and Warton (Lancashire); Berwick, Earsdon, Felton and Tynemouth (Northumberland); Bridlington (Yorkshire, E. Riding); Easingwood, Kirkdale, Sessay and Yarm (Yorkshire, N. Riding); Adel, Burnshall, Carlton, Clapham, Conisburgh, Darfield, Dewsbury, Emley, Gisburne, Guisely, Ledsham, Otley, Skipton, Thornhill, Waddington, Wath (Yorkshire, W. Riding)
 48. Scott, Duncan and Duncan, 'Plague in Penrith', 1–21. See also Slack, *Impact of plague*, 177–86.
 49. Number of burial intervals during years of crisis on table 5 = 128, of which 16 pairs of burials took place within 28 days.
 50. Cooper and Donald, 'Households and "hidden" kin'.
 51. Lancs R.O. QSP/322/10.
 52. King, 'Proto-industrial family'.
 53. Lancs R.O. QSP 226–497.
 54. Lancs R.O. QSP/374/3.
 55. Lancs R.O. QSP/366/14.
 56. Lancs R.O. QSP/349/8.
 57. Lancs R.O. QSP/322/10; QSP/374/6; QSP/382/11; QSP/382/6.
 58. Lancs R.O. QSP/475/14.

59. Lancs R.O. QSP/497/15.
60. Arkell, 'Multiplying factors', 51–7; Goose, 'Household size and structure', 364, 368; Laslett, 'Mean household size in England since the sixteenth century', in Laslett and Wall, *Household and family in past time*, 126;
61. Laslett and Wall, *Household and family in past time*, 85.
62. Chaytor, 'Household and kin', 55.
63. Laslett, 'Size and structure of the household'.