DISTANCE TO CHURCH AND REGISTRATION EXPERIENCE

Roger Finlay

Roger Finlay has written about the population of Tudor and Stuart London. He is currently working on the population of the North-West in the seventeenth and eighteenth centuries.

The question of the accuracy of the parish registers is of great importance to the population historian studying the period after 1660 when it is generally agreed that some registers of baptisms, weddings and burials were becoming less reliable as guides to the numbers of births, marriages and deaths that actually occurred. One of the main conclusions about the standard of registration is that it varied considerably even between parishes which were situated close to each other.¹ Local social and economic conditions are often ignored when evaluating the reliability of parish registers as sources for population studies. An especially interesting area of England was the Furness district of north Lancashire (now Cumbria) where the parishes were very large. The subject of this paper will be registration at Hawkshead where a continuous record was kept from 1568. The Hawkshead registers will be compared with those for the neighbouring parishes of Cartmel and Ulverston.

A number of important features of the Hawkshead registers were remarked upon by H. S. Cowper and K. Leonard who edited the successive published parish register volumes.² These included details of place of residence, and at times occupations, as well as comments on unusual events such as violent deaths. The parish clerks also attempted to draw attention to established householders and to paupers. One of the features of the registers that is particularly suggestive of their effective compilation is that the burials of abortive children were frequently recorded even though there was no statutory requirement to do this. It is not exactly clear what the parish register means when it refers to the burial of abortives, but it seems reasonable to assume that such infants were dead at birth.³ Abortives recorded in the Hawkshead register appear to have been stillborn and the two terms are used interchangably in this paper. The inclusion of children who were not born live is uncommon in English parish registers. The fact that the trouble was taken to record the burials of children who were stillborn would suggest that the baptisms of children who were liveborn were also conscientiously registered. Attention has been drawn to this unusual feature of Hawkshead registration experience by Roger Schofield and some of his data are given in Table 1. Over the half-century from 1661 to 1710, the foetal death rate calculated as the number of stillbirths as a proportion of live births was 75 per thousand whilst in one decade, 1691
to 1700, it reached almost 100 per thousand. These stillbirth rates are exceptionally high even for pre-industrial communities. For example, in London parishes of contrasting socio-economic characteristics before 1650, the stillbirth rate hardly exceeded 50 per thousand and this also appears to be the upper limit in nineteenth-century England. In Sweden in the period from 1756 to 1760, the rate was only 25 per thousand.

Table 1: Deaths of unnamed and stillborn children in Hawkshead, Lancs., 1661-1710.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Baptisms (1)</th>
<th>Total burials (2)</th>
<th>Burials of unnamed (3)</th>
<th>Burials of abortives (4)</th>
<th>Total live births (1) + (3) × 1,000 (5)</th>
<th>Foetal death rate (4) / (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1661-1670</td>
<td>320</td>
<td>444</td>
<td>5</td>
<td>25</td>
<td>325</td>
<td>77</td>
</tr>
<tr>
<td>1671-1680</td>
<td>229</td>
<td>364</td>
<td>6</td>
<td>15</td>
<td>235</td>
<td>64</td>
</tr>
<tr>
<td>1681-1690</td>
<td>263</td>
<td>360</td>
<td>5</td>
<td>18</td>
<td>268</td>
<td>67</td>
</tr>
<tr>
<td>1691-1700</td>
<td>273</td>
<td>370</td>
<td>9</td>
<td>27</td>
<td>282</td>
<td>96</td>
</tr>
<tr>
<td>1701-1710</td>
<td>256</td>
<td>265</td>
<td>1</td>
<td>18</td>
<td>257</td>
<td>70</td>
</tr>
<tr>
<td>1661-1710</td>
<td>1,341</td>
<td>1,803</td>
<td>26</td>
<td>103</td>
<td>1,367</td>
<td>75</td>
</tr>
</tbody>
</table>


Although the recording of stillbirths gives the impression that registration at Hawkshead was good, especially as there were no gaps in the parish registers, this conclusion is not confirmed by other statistical evidence. The register may have included all the baptisms which took place in the parish, but it was not necessarily a complete record of all the births that occurred. Where registers were generally well kept the major cause of deficiency will be the length of the customary interval between birth and baptism because some children may have died before they would have been christened. It is not known how long parents waited after birth before they took their infants for christening. As there is little surviving information from which the interval between birth and baptism may be calculated, it is necessary to find an alternative way of measuring the extent to which there were more births occurring than baptisms actually recorded. It is known that infants are at greatest risk of dying immediately after birth and that this risk declines with increasing age. In many pre-industrial communities infant mortality rates were high and half the deaths would generally occur within the first month of life. If the interval between birth and baptism were a month, this could have the effect of reducing the infant mortality rate by half as a percentage of the births would not have been recorded as baptisms.

Infant mortality rates are frequently divided into two components. Endogenous infant deaths are those associated with the circumstances of the birth whilst exogenous deaths result from diseases and accidents picked up after birth. Since all endogenous deaths occur within the first month of life, very low endogenous infant mortality rates are indicative of birth under-registration. Endogenous and exogenous components of infant mortality rates may be calculated by a graphical method utilising a biometric analysis of the data. If the cumulative infant mortality rate is plotted against the age at death represented on a scale log⁷ (n + 1) where n is age in days since birth, the graph after the first month results
Figure 1: Biometric analysis of infant mortality.

Figure 2: Biometric analysis of infant mortality if births are under-registered.
in a straight line as in Figure 1. If this plot is extended back to the intercept on the x-axis of the graph, a good estimate of the endogenous and exogenous components of the infant mortality rate is provided. Infants do not die from endogenous causes after the first month of life. This method has been shown to work using data not only from English and continental populations in the past but also from modern world populations. If the endogenous component of the infant mortality rate is very small, as in Figure 2, with the plot of the cumulative total infant deaths cutting the x-axis of the graph close to the origin, or even the y-axis, births must have been under-registered because an insufficient proportion of them resulted in endogenous infant deaths. Although it is not known how low the endogenous infant mortality rate could be whilst remaining consistent with effective registration of births, a rate of little

![Map of Furness registration areas, 1690-1709. The broken lines enclose chapelry areas within parishes which kept their own registers at this time.](image)

Figure 3: Furness registration areas, 1690-1709. The broken lines enclose chapelry areas within parishes which kept their own registers at this time.
more than zero as in Figure 2 clearly indicates poor registration of births. The observed distribution of infant deaths does not match up with the expected distribution. Where the endogenous infant mortality rate is low, there is good reason to suppose that some births did not result in a corresponding entry in the baptism register. Any delay between birth and baptism, and especially an interval of up to a month would mean that the calculated endogenous infant mortality rate would be reduced because infants were at such risk of dying close to birth.

In the absence of family reconstitution methods, the infant mortality rate may be calculated as the number of deaths occurring within a year from birth per thousand live births. This will underestimate the true rate because it does not take into account the deaths of those infants who migrated from the parish with their parents during the first year of life although it is unlikely that this problem will affect the results to any marked extent. It was assumed that infants recorded in the burial register without having been named had been born in the parish but had probably died before they could have been taken to church for christening. The existence of these infants dying unnamed therefore indicates that there were more births than baptisms. To set the material for Hawkshead into perspective, the data will be compared with those for two neighbouring parishes, Cartmel and Ulverston, where abortives were not recorded. Cartmel and Ulverston were bounded by the coast of Morecambe Bay on at least one side, and the locations of all these parishes are shown in Figure 3. The data will refer to the two decades 1690 to 1709.

![Graph](image.png)

*Figure 4: Cumulative infant mortality rates per thousand live births 1690-1709.*
Endogenous and exogenous components of infant mortality rates calculated by the graphical method are shown in Table 2 and Figure 4 for the three parishes. In this diagram, the total infant mortality rate at Hawkshead after the first year was 74 per thousand live births, and 27 after the first month, whilst the endogenous rate was only 12. This is represented by the point where the line joining the various observations intercepts the vertical axis on the graph. Infant mortality rates were clearly low in this area. At Hawkshead, the total rate is suspiciously low and the endogenous rates at both Hawkshead and Ulverston strongly suggest that births were not being adequately registered. A far smaller proportion of deaths were occurring in the first month of life than might be expected. This point is underlined in Table 3 which presents the data more fully. It is clear that in Hawkshead and Ulverston very few infants died within the first week after baptism compared with Cartmel where
registration experience was quite adequate and very similar to a sixteen-parish national sample in the 1680s.\textsuperscript{10} Comparison of the data for Cartmel with the national sample suggests that the quality of the baptism register for Cartmel was better than in the other two parishes, according to the assumptions made in this essay. However, there was some slight under-registration at Cartmel because there were insufficient burials of unnamed infants for which there was no corresponding baptism entry to account for those deaths which occurred in the period between birth and baptism.

Table 4: Size\textsuperscript{*} of parishes and population in 1801.

<table>
<thead>
<tr>
<th>Parish</th>
<th>Acres</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawkshead</td>
<td>19,252</td>
<td>1,585</td>
</tr>
<tr>
<td>Cartmel</td>
<td>22,960</td>
<td>4,007</td>
</tr>
<tr>
<td>Ulverston</td>
<td>13,706</td>
<td>4,422</td>
</tr>
</tbody>
</table>


Another factor which has an important bearing on the question of the incompatibility between the apparently good Hawkshead registers and the low level of endogenous infant mortality is the size of the parishes in this region. As Figure 3 and Table 4 clearly illustrate, these Furness parishes were very large in area.\textsuperscript{11} In relation to possible total population size this was especially marked at Hawkshead where the inhabitants were dispersed in individual farms or small hamlets scattered in the valleys throughout the parish. Relatively few people lived close to the church and many had to travel some miles across difficult countryside to register baptisms and burials. To some extent this was also true of Cartmel and Ulverston but these parishes contained far less fell country than Hawkshead. It would clearly have been hazardous to have taken newly born children from outlying farms several miles to the parish church at Hawkshead to be christened.

Many years ago, J. D. Chambers realised that the size and shape of parishes could affect registration in that people living a very long way from church might find it difficult to register vital events. He commented:

> In the Marsh parishes in Lincolnshire, for instance, where the church may be five miles from the outlying farms, the failure to baptise the newly born was a much more common occurrence than to bury the dead, and this is reflected in the greater frequency with which burials outstripped baptisms.\textsuperscript{12}

Much the same point was made by M. L. Armit in her history of the upland parish of Grasmere, directly to the north of Hawkshead:

> The Ambleside folk, when in 1674 they petitioned their bishop for the right of burial in their chapel, stated that 'by reason of the heat in summer and the great snowes and sudden inundations of water in winter it is very difficult and dangerous to carry their dead thither (to Grasmere) for burial'; yet their distance from the church was nothing like that of the Langdale folk.\textsuperscript{13}

Doubtless they also found the journey to Grasmere to baptise their children a problem.
It is not clear how the registers were compiled in these large parishes. Chapelries were established in most large Lancashire parishes to enable local people to worship regularly without making a long journey to the parish church. For example, in Ulverston parish, the chapelries of Church Coniston and Torver in the north kept registers from 1599, and these were excluded from the analysis of the Ulverston registers. There were no other chapelries which kept their own registers in the parishes and the period analysed in this essay. However, the original registers kept in the parish chests at Hawkshead and Cartmel are parchment copies of either original paper registers or rough notebooks in which the records of baptisms, weddings and burials were entered as they occurred. In Cartmel, there were four chapelries at Lindale, Flookburgh, Staveley and Cartmel Fell which did not keep registers but could have baptised, married and buried people and then sent a record of these events to the Priory Church each year to be entered in the parish registers. The Bishops’ Transcripts of the registers for the later eighteenth century suggest very strongly that this is what happened, but it is not very clear how early this practice had begun. The chapelries were also licensed for marriages. The marriage licences were sometimes valid only for particular chapels after 1718, when the licences first name the churches for which they were valid. Many of the marriages which took place in the chapelries were recorded in the parish registers in the same way as if the wedding had been celebrated in the Priory Church. Nevertheless there is some evidence to suggest that local people in Cartmel registered vital events in the chapel in which they worshipped and these records were then transferred to the central parish registers.

In contrast, there were no chapelries before 1733 in Hawkshead, which made all inhabitants use the parish church.

The problem of distance to church in Hawkshead may be pursued further in Figure 5 which shows the residence of all infants and abortives buried. This map is especially interesting because it confirms that relatively few people lived in Hawkshead Town during this period but that the population was scattered throughout the parish in the lowland valleys. The fact that people living a long way from the parish church, for example at Satterthwaite or Skelwith, bothered to register events there is significant for it demonstrates quite clearly that registration was effective wherever possible since many people preferred the parish church to neighbouring churches at Colton, Ambleside and Church Coniston to which access may have been more convenient. Nevertheless, because of the distances to church it might be expected that a fair proportion of infants would have died unbaptised unless they were christened privy at home and this did not appear in the parish registers. Secondly, the map is important as it suggests that people living in the main settlements at Hawkshead Town, Monk Coniston and Sawrey were more likely to have had their infants christened than those in Skelwith, Grizedale, Satterthwaite and Dale Park where nearly all the recorded infant deaths were of abortives.

It could be argued that women from lower social status families would be more likely to have conceptions resulting in stillbirths or abortives than their wealthier neighbours. If the distribution of social groups within
Figure 5: Residence of infants and abortives buried at Hawkshead, 1690-1709.
Hawkshead were such that people of higher social status lived closer to the church and that the poorer people mainly inhabited the peripheral parts of the parish which were least accessible to the centre, Figure 5 would really represent only a map of social areas within Hawkshead. It is difficult to substantiate this point but it seems that wealthier and poorer people did not live in different parts of the parish. For 24 of the 87 burials of infants and abortives, or 28 per cent, it was possible to link probate inventories of fathers of these children to the names recorded in the parish registers. For 10 abortives, the mean wealth at death was £139.71 and for 14 infant burials, it was £197.64. Since one of the latter fathers was worth £1,656.37 at death, this person was eliminated and the mean wealth of the remainder was £85.43. The inference to be drawn from this is that the parents of both abortives and infants buried were of similar social status. Wealthier and poorer people in Hawkshead do not appear to have inhabited distinctive areas of the parish at this time.

This method of reasoning is obviously inconclusive in that it is based on a small sample of abortives and infant burials whose fathers could be linked to an inventory and also because of the question of the representativeness of the inventory sample as a guide to social status. Although they exclude many of the poorer sections of the community, inventories do survive for large numbers of people in the Cumbrian area at least till 1750. Nevertheless, the recording of abortives and infant burials was not obviously socially biased.

Table 5: Low and high estimates of Hawkshead infant mortality rates, 1690-1709.

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
<th>Mid-Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>74</td>
<td>151</td>
<td>113</td>
</tr>
<tr>
<td>Endogenous</td>
<td>12</td>
<td>93</td>
<td>53</td>
</tr>
<tr>
<td>Exogenous</td>
<td>62</td>
<td>58</td>
<td>60</td>
</tr>
</tbody>
</table>

The number of abortives included in each set of calculations is shown in brackets underneath. See text for method of calculation.

Indeed, the argument about the accessibility of the parish church from some parts of Hawkshead may be pushed a stage further by suggesting that the abortives recorded in the burial register at Hawkshead were in fact the record of children which had been born live but died shortly afterwards and had been too weak to have been taken for christening in church. This would explain why so many endogenous infant deaths were missing from the registers. But since there were 48 abortives recorded in the burial register between 1690 and 1709, if all the abortives were liveborn, the endogenous infant mortality rate would have been very high indeed. A more plausible explanation is that some of the abortives were stillborn and some were liveborn. There is insufficient information given in the registers to distinguish which had been born live. Because of this, low and high estimates of the Hawkshead infant mortality rate are given in Table 5. In the low estimates it was assumed that all the abortives were stillborn, whilst in the high estimates all were liveborn. The mid-point represents the situation where half the abortives were stillborn and half were liveborn. The resulting rates were similar to those

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for Cartmel where registration was apparently better, but with a higher endogenous component which takes account of the interval between birth and baptism. If the underbaptism rate were calculated as the number of dummy births (3) and liveborn abortives (24) per thousand live births (552 + 3 + 24), there would be 27 underbaptisms and 552 live births giving a rate of 49 per thousand. The multiplier from baptisms to births at Hawkshead would therefore be 1.05 (552/525). This applies only to the period from 1690 to 1709. Local topography and distance were important in determining whether a child dying soon after birth would have been baptised.

The suggestion that some, but not all, of the abortives contained in the Hawkshead burial register were born live but died very shortly afterwards is consistent with most of the known features of registration. If half the 48 abortives were stillborn, the stillbirth rate would be reduced from 91 per thousand to 43 per thousand live births which is similar to other pre-industrial populations and is still consistent with good registration. The infant mortality rate is much less suggestive of defective registration if half the abortives were born live but died very soon after birth. The reason that so many infants died unnamed at Hawkshead where registration was apparently generally good, but less satisfactory in reality, may therefore have been related to the size of the parish and the nature of the countryside. This does not, however, enable those abortives which may have been born live to be identified. At Ulverston, registration was less good than at Hawkshead because the endogenous infant mortality rate was low and stillbirths were not included. Figure 4 clearly illustrates that the most useful register was for Cartmel.

Parish sizes may therefore have had an important effect on registration and their large areas may be one of the reasons for defective registration at Hawkshead and Ulverston. As the case of Hawkshead demonstrates, the geographical extent of the parish, the scattered population and the difficult countryside meant that there were problems in compiling the register effectively, even though the inclusion of stillbirths strongly suggests that the parish clerk tried very hard to ensure that there was some record of all infants born in the parish. Doubtless there are other explanations of the abortives which would merit consideration. Local customs were of some importance in determining how problems encountered in individual areas were to be overcome. And it is important to realise that there were other factors affecting registration experience in Hawkshead at this time. Whether the Hawkshead abortives were live or dead born is of great importance for the calculation of rates of fertility and mortality in the parish but whatever viewpoint is preferred, as Roger Schofield argued, these deaths were clearly perinatal, that is occurring close to birth.

One of the intriguing features of English historical demography is that the main data sources vary in their consistency both across space and through time. Much of the work that has been accomplished relates to the Midlands and the South. The different countryside encountered in parts of the North presented some special problems for the compilation of the parish registers, amongst which are included the very large size
of the parishes. Thus population historians should be aware not only of the deterioration in the quality of the parish registers during the period of the industrial revolution in some areas, but also in the equally wide variations which could be apparent between individual parishes and areas. In Hawkshead and its neighbourhood, the large geographical extent of the parishes, and the scattered settlement pattern presented a special challenge for the parochial registration system. The recording of abortives in Hawkshead allows some insight to be gained into the problem of how perinatal deaths could be incorporated into the parish registers.²³

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3. Typical burial entries from the Hawkshead register for 1692 are:
   ‘November 8: An Abortive son of George Riggs of Satterthwait.
   14: An abortive daughter of George Taylors of Grysall.’


6. The Hawkshead parish register does not contain sufficient information to calculate the birth-baptism interval at this time. In the period from 1778 to 1786 it was very similar to the average for a sample of parishes for which this measure could be calculated. B. M. Berry and R. S. Schofield, ‘Age at baptism in pre-industrial England’, *Population Studies*, 25, 1971, pp. 453-63.


8. For example, in Belgium in 1841-5, the endogenous infant mortality rate was 38 per thousand and the total infant mortality rate was 157 per thousand so 24 per cent of all infant deaths were endogenous. Examination of calculations made from accurate civil statistics show that the endogenous rate in Figure 2 is too low to be plausible when considered in relation to the exogenous rate. See Poulain and Tabutin ‘Mortalité aux jeunes âges en Belgique’ (note 7), Table 3, p. 59 and Graph 4, p. 60; and Wrigley, ‘Births and baptisms’ (note 7), Table 13, p. 299 and Table 14, p. 302.

9. In this discussion, Ulverston excludes the chapelries of Church Coniston and Torver in the northern part of the parish which registered events separately.
10. The data for the 16 parish sample are drawn from Wrigley, 'Births and baptisms' (note 7), Table 7, p. 291. Professor Wrigley argued that the number of baptisms ought to be inflated by about 5 per cent in the period 1650-99 and 7½ per cent in 1700-49 to account for under-registration of births in a national sample (op. cit., p. 310). For Hawkshead, the data differ from Dr. Schofield's in that the baptisms and burials of illegitimate children are not included.

11. The large size of parishes in Lancashire compared with the remainder of the country is brought out very clearly in a map showing the average size of parishes by registration districts in 1851 in J. B. Harley, 'England circa 1850', in H. C. Darby, ed., A new historical geography of England, Cambridge, 1973, Figure 109, p. 532.


15. R. Stewart-Brown, W. F. Irvine and R. Dickinson, eds., Lancashire marriage bonds, Lancashire and Cheshire Record Society, 75, 1920; 80, 1925-6; 81, 1926-7; 83, 1933; and 100, 1949.

16. In Cartmel, the exception to this statement was in Cartmel Fell, on the eastern shore of Lake Windermere and somewhat peripheral to the main part of the parish. Here, the Friends' Meeting House, which had been established at Height in 1677, was especially strong, and early impressions from a family reconstitution study of the whole parish suggest that family reconstitution forms are incomplete for many inhabitants of Cartmel Fell, especially when compared with wills.

17. The information about the chapelries was taken from the Victoria County History, Lancashire, 8, 1914, pp. 254-85, 342-63, 370-82.

18. This may exclude 3 liveborn infants and 2 abortives buried at Hawkshead but resident outside the parish and 2 liveborn infants and 3 abortives whose residence was not given in the registers.

19. The probate inventories are at Lancashire Record Office, filed with Richmond wills, Furness deanery, WRW. There is a discussion of Hawkshead probate inventories in J. D. Marshall, 'Agrarian wealth and social structure in pre-industrial Cumbria', Economic History Review, forthcoming.

20. Other factors could of course have affected registration. One was the rise of non-conformity and the most important group in Hawkshead were the Quakers who had a burial ground in the parish at Colthouse. Although this essay is concerned with Anglican registration, the experience of nonconformists may have had a bearing on Anglican registration in that some people may have used more than one system. During the period, there were 29 burials of Friends and 609 of Anglicans so the Quakers accounted for only 4.5 per cent of all burials. There is no evidence that there were any infant burials at Colthouse at this time of children baptised in the parish church. E. J. Satterthwaite, Records of the Friends' burial ground at Colthouse, near Hawkshead, Lancashire, Ambleside, 1914.


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