AN EXERCISE IN DADE PARISH REGISTER DEMOGRAPHY:
ST OLAVE, YORK, 1771–1785

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Introduction

Roger Bellingham's article about Dade parish registers raises a number of interesting issues.[1] Perhaps the most important is the implication that since so much care was taken with the additional details contained within each entry, this set of registers is likely to be more accurate than many others in this period. While anyone who has examined a Dade register will immediately acknowledge the quality of the information it contains, its overall usefulness for any form of demographic analysis is, as with all registers, dependent upon two conditions:

   1. the register should contain an accurate list of every baptism, burial and marriage that occurred in the church;

   2. the totals of baptisms, burials and marriages recorded by the register should provide approximate guides to the number of births, deaths and marriages that occurred within the parish.

Thus, before employing Dade registers to enhance our knowledge of the demography of England during the late eighteenth century, it is important to establish whether these documents were affected by significant levels of under-registration.

St Olave, York

An appropriate place to begin any investigation into Dade registers is the City of York where William Dade held office. Dade became curate of St Helen's Stonegate and vicar of St Olave in the middle of 1770 and his system of registration was introduced into a number of other York parishes shortly afterwards.[2] Of those parishes where Dade was responsible for the register, only St Olave's has been printed and then only until 1785.[3] Since the availability of a printed register facilitates demographic analysis, this register was chosen to carry out a series of simple exercises for the period 1771–85.

Table 1a   Birth-baptism intervals, St Olave and St Michael le Belfrey, York.

Parish	Period	Interval in days by which stated percent of births were baptized				Number of observations	Per cent incomplete
		25	50	75	90		
St Michael le Belfrey	1653–57	4	6	8	9	171	2
St Olave	1653–58	3	4	7	9	30	36
St Olave	1771–85	2	5	13	25	455	3
St Michael le Belfrey	1803–12	3	7	25	57	585	0

Source: C. Galley, *The demography of early modern towns: York in the sixteenth and seventeenth centuries* (Liverpool, 1998), 62; B. Whitehead ed., 'The parish register of St Olave, York 1650–1785', *Yorkshire Parish Register Society*, **158** (1993).

Table 1b   Birth-baptism intervals for infant deaths, St Olave, York, 1771–85.

Parish	Period	Interval in days by which stated percent of births were baptized				Number of observations	Per cent incomplete
		25	50	75	90		
St Olave	1771–85	1	3	8	14	57	4

Source: Whitehead, 'St Olave'.

While the following does not claim to be comprehensive, and 15 years is a relatively short period to undertake any form of demographic analysis, it is still sufficient to provide an indication of the register's accuracy and consequently the potential value of other Dade registers.

The format of the St Olave register is identical to that of St Helen's Stonegate.[4] The baptism register includes dates of birth and baptism, details of the father and mother together with their ancestry, the father's occupation and some indication of place of residence, including whether the individual originated from the poorhouse. Illegitimate baptisms are also indicated. The burial register gives dates of death and burial, cause of death and similar levels of genealogical and residential detail to the baptism register. Linking entries between the two registers is therefore a relatively straightforward procedure. Occasional entries such as the following two, taken from the baptism register, give exceptional insight into certain aspects of York society during the late eighteenth century:

(August 11 1782) John, born 15th July, son of Sarah Heels, wretched idiot both deaf and dumb; father some wicked unprincipled Villain in the poorhouse, whose name cannot be found out, for reason very obvious. In the poorhouse.

(November 4 1785) Joseph and Thomas, born same day in the City Poorhouse, twin sons of Rebecca Mellon of the parish of St Michael le Belfrey, married to Joseph Burton [of whose parentage and profession nothing can be collected] who at that time had another wife who has since claimed her husband.[5]

Here, because we are seeking to investigate the register's accuracy, we are concerned with the more mundane entries. A cursory examination of the register reveals no obvious breaks in registration, but systematic under-registration may have occurred if the interval between birth and baptism was sufficiently long to ensure that many infants died unbaptised. Such infants would clearly be missing from the baptism register, but if unbaptised infant burials were not recorded then the overall amount of under-registration will be impossible to determine.[6] Table 1a shows birth/baptism intervals in St Olave together with comparable ones from St Michael le Belfrey, the best kept of York's parish registers which also adopted elements of Dade format between 1779 and 1812. By the 1770s the gap between birth and baptism in St Olave had increased compared with a century earlier, although over 50 per cent of infants were still baptised within one week of their birth.[7] Intervals were generally shorter than in St Michael le Belfrey (1803–12), but in about 10 per cent of all cases baptisms were delayed by at least one month. Reassuringly perhaps, Table 1b shows that for infants who died within one year of their birth intervals were much shorter, and this suggests that greater efforts may have been made to baptise weaker infants. Thus, even though the St Olave register gives every outward appearance of accuracy, the extent of the delay between birth and baptism raises the possibility that some may have escaped registration entirely. While there can be no definitive means of establishing a register's accuracy, the demographic rate most susceptible to poor registration is the infant mortality rate (IMR) and an examination of this measure in St Olave may therefore shed more light on the register's accuracy.

Infant mortality in St Olave, 1771–85

Before IMRs are calculated for St Olave it is important to note that much has already been established about infant mortality in York. IMRs in the city were in the region of 260 per 1,000 live births in 1700, with little variation between parishes, and by the 1840s rates had fallen to around 200.[8] When attempts were made to determine IMRs during the intervening period using a sample of parish registers the results were disappointing. Rates fell steadily in all parishes throughout the eighteenth century to reach around 130 by the early nineteenth century. As this was about 70 lower than the rates calculated from 1840s civil registration data, it was therefore necessary to conclude that such trends were untenable and that York's eighteenth-century registers suffered from increasing levels of under-registration. While patterns of infant mortality in York during the eighteenth century remain unknown, it would seem reasonable to expect that, unless something peculiar was happening, IMRs in this parish during the late eighteenth century should have stood between 180 and 260, with anything significantly beyond this range being highly unlikely. With these parameters set, the investigation of infant mortality can proceed.

Table 2a   Period infant mortality rates, St Olave, 1771–85.

Year	Baptisms	Infant burials	Infant mortality rate
1771	38	2	53
1772	33	4	121
1773	30	4	133
1774	34	3	88
1775	28	2	71
1776	29	8	276
1777	33	5	152
1778	29	10	345
1779	25	8	320
1780	33	6	182
1781	30	8	267
1782	23	6	261
1783	24	7	292
1784	39	7	179
1785	27	5	185
1771–75	163	15	92
1776–85	292	70	240
1771–85	455	85	187

Source: Whitehead, 'St Olave'.

IMRs can be calculated in two ways. Since age at death was recorded in this register annual period IMRs can be calculated using the standard formula, (infant deaths / baptisms) * 1,000. Alternatively, cohort IMRs can be calculated by linking baptisms to appropriate infant burials, a straightforward procedure given the level of detail contained in this register. This method takes longer, but it has the advantage that unbaptised infant burials can be identified. IMRs are then calculated using the formula, ((baptisms + unbaptised infant deaths) / (infant deaths + unbaptised infant deaths)) * 1,000. The second method tends to yield more accurate estimates when age at burial is included, since it allows any infant whose age is not given or given incorrectly to be linked to their baptism and it also allows the number of births to be inflated by the number of unbaptised infant deaths. Tables 2a and 2b shows annual IMRs in St Olave using both methods. First, it is apparent that both period and cohort rates are broadly similar with the more accurate cohort IMR being slightly lower.[9] In both tables annual rates varied considerably and this is mainly due to the small number of events taking place in each year. More worryingly, after 1775 IMRs

Table 2b   Cohort infant mortality rates, St Olave, 1771-84.

Year	Baptisms	Infant burials	Unbaptised infant deaths	Infant mortality rate
1771	38	2	0	53
1772	33	4	1	147
1773	30	4	1	161
1774	34	5	0	147
1775	28	2	0	71
1776	29	7	0	241
1777	33	4	2	171
1778	29	7	2	290
1779	25	5	5	333
1780	33	2	3	139
1781	30	6	2	250
1782	23	2	5	250
1783	24	1	5	200
1784	39	4	2	146
1771-75	163	17	2	115
1776-84	265	38	26	220
1771-84	428	55	28	182

Source: Whitehead, 'St Olave'.

doubled in both series. Inspection of the register reveals no obvious change in recording practices with the same level of detail appearing both before and after 1775. Table 2b does, however, show that much of this change was due to the appearance of greater numbers of unbaptised infant deaths in the burial register from 1776. These were not specifically identified, but they can be inferred since no link could be made to an appropriate baptism. It cannot be established if such burials were the result of nonconformity, recent inmigration or simply that some parents did not bother to have their infants baptised. All three are distinct possibilities and whatever the truth may be it is clear that for IMRs to be considered reliable unbaptised infant deaths need to be recorded accurately.[10]

Tables 2a and 2b showed that both period and cohort IMRs for the period 1776–85 fall within the expected range, but further investigation reveals additional problems. The first concerns illegitimacy. Since illegitimates were reported in both baptism and burial registers illegitimacy ratios (the proportion of illegitimate baptisms) can be calculated, as shown in Table 3. The presence of a poorhouse in the parish greatly affects these ratios since a large proportion

Table 3   Illegitimate ratios, St Olave, 1771–85.

Year	Baptisms	Illegitimate baptisms	Unbaptised illegitimate burials	Illegitimacy ratio	Illegitimate baptisms from Poorhouse	Unbaptised illegitimate burials from Poorhouse	Poorhouse illegitimacy ratio
1771–75	163	19	0	0.117	9	0	0.055
1776–85	265	45	5	0.185	25	4	0.107
1771–85	428	64	5	0.159	34	4	0.088

Source: Whitehead, 'St Olave'.

Table 4   Illegitimate infant mortality rates, St Olave, 1771–85.

Period	Illegitimate infant mortality rates		
	Overall	Poorhouse	Non-Poorhouse
1771–75	53 (1)	111 (1)	0 (0)
1776–85	300 (15)	448 (13)	95 (2)
1771–85	232 (16)	368 (14)	65 (2)

Note: Figures in brackets refer to number of infant deaths.
Source: Whitehead, 'St Olave'.

of illegitimate births and deaths came from this institution.[11] In this period the national illegitimacy ratio was about 6 per cent, less than half the 16 per cent in St Olave.[12] Much of this difference was due to illegitimate baptisms from the poorhouse, many of which probably originated from other parishes within the city. Table 3 also shows that illegitimacy ratios increased after 1775 and again there is no obvious reason for this. The presence of so many illegitimates in the parish is likely to be an important influence on the overall IMR. Table 4 shows illegitimate IMRs and once again it is important to stress the small population at risk. Differences pre- and post-1775 are again apparent, with the cause once more being the appearance of greater numbers of unbaptised infant burials after 1776. The overall illegitimate rate of 232 for 1771–85 is high, but similar to the IMR for the parish as a whole. While this may appear encouraging, when Wrigley *et al.* attempted to factor illegitimacy into their parish reconstitution IMRs they assumed that the illegitimate IMR was double the legitimate rate.[13] If this relationship is correct then it would suggest that there was substantial under-recording of illegitimate burials in St Olave. Certainly the poorhouse illegitimate IMR of 368 is high and conditions in this institution must have been poor: even the Master of the poorhouse recorded an infant death in this period.[14] However, the reliability of this and the other rates in Table 4 must be open to question. It is likely that turnover rates in the poorhouse were high and this makes the calculation of IMRs unreliable since for rates to be accurate the infants' families need to remain in view for at least one year following a birth. Furthermore, the IMR of those illegitimates born outside the workhouse was very low. It is therefore difficult to understand how the large number of illegitimate baptisms in St Olave affected its IMR. The presence of the

Table 5   Distribution of infant burials in York.

| Age at burial | St Olave 1771–85 | | | St Michael le Belfrey 1571–86 | | | St Michael le Belfrey 1779–1837 | | | York 1845–46 | | |
	No.	%	Cumu-lative%	No.	%	Cumu-lative%	No.	%	Cumu-lative%	No.	%	Cumu-lative%
Days 0	3	4	4	33	25	25	10	2	2			
1–6	7	8	12	27	21	46	30	7	10			
Weeks 0	10	12	12	60	46	46	40	10	10			
1–3	13	15	27	19	15	61	57	14	24			
Months 0	23	27	27	79	61	61	97	24	24	201	35	35
1	13	15	42	8	6	67	74	18	42	91	16	51
2	5	6	48	6	3	72	34	8	51	52	9	60
3–5	18	21	69	21	16	88	82	20	71	97	17	77
6–11	26	31	100	16	12	100	116	29	100	132	23	100
Total	85			135			437			573		

Source: Galley *et al.*, 'Detection without correction', 165, 172; Whitehead, 'St Olave'.

poorhouse will have tended to inflate the parish IMR, but since the overall illegitimate IMR was still comparatively low there must also have been some further under-registration of illegitimate infant burials.

Finally, it is possible to investigate the age distribution of infant burials.[15] It is well-known that infants have a high mortality rate close to birth and that the risks they face lessen with age. Consequently, a large proportion of all infant deaths should occur within the neonatal period (0–28 days). Table 5 shows the age distribution of burials in St Olave together with comparable distributions from York. The distribution of infant burials in St Olave is virtually identical to that in St Michael le Belfrey, 1779–1837. In St Michael le Belfrey there was a substantial decline in the proportion of neonatal deaths between the sixteenth and nineteenth centuries. Thus, 46 per cent of deaths occurred within one week and 25 per cent on the first day in the sixteenth century, but by the early nineteenth century comparative figures were only 10 and 2 per cent respectively. This phenomenon in part reflects the decline in neonatal mortality that occurred throughout the country during the eighteenth century,[16] although it also suggests under-registration since this register formed part of the sample used to determine IMRs in eighteenth-century York. This suspicion is confirmed when similar information is examined for the York registration district during the 1840s. In the York registration district 35 per cent of infant deaths occurred within the first month compared with only 24 per cent in St Michael le Belfrey, 1779–1837 and 27 per cent in St Olave. Given prevailing national trends, it would seem unlikely that neonatal IMRs in St Olave increased after 1785 and it is probable that the difference was due to a significant number of infants dying shortly after birth and escaping registration. If the proportion of neonatal deaths in St Olave is increased to that

in the registration district, then this would raise the cohort IMR, 1776–84, to about 240 and imply that most of the decline in York's infant mortality occurred after 1785. However, such a conclusion must remain at best supposition.

Conclusion

Given the above provisos about small sample size some tentative conclusions can now be made. There are three reasons why doubt must be cast on the accuracy of the St Olave's register:

1. the quality of registration in St Olave improved considerably after 1775 even though there is no outward change in the register's appearance;

2. the low overall illegitimate IMR implies that some illegitimate infant deaths escaped registration;

3. the distribution of infant burials suggests that some neonatal infant deaths are also missing from the register.

In all three cases these problems cannot be detected from a simple examination of the register. The relatively high IMR calculated in St Olave may appear to confirm the register's accuracy, but this has been shown not to be the case and while under-registration in St Olave may not have been severe it was still sufficient to affect the accuracy of demographic measures such as the IMR.[17]

To sum up, of the two preconditions needed to ensure a register's accuracy it is probable that St Olave's meets 1), but it fails 2), the reason being that some unbaptised infants who died close to birth were buried as though they were stillborn; they did not receive a formal ceremony and consequently do not appear in the register. A few infants who died close to birth are included, but not sufficient to ensure that the distribution of infant deaths was consistent with that prevailing in the mid-nineteenth century.[18] Such a conclusion is not necessarily surprising and, as Bellingham showed in the following extract taken the parish register of Alne, the purpose of Dade's reforms were to ensure that the register could be used to identify individuals in legal

As great complaints have arisen of the registers of Marriages, Births and Burials belonging to several parishes being inaccurately kept and drawn out so as not to identify the persons etc whereby they have not their due weight in point of evidence: It is required that for the future the following form be pursued and adhered to.[19]

Thus, there was little reason for infants who died shortly after birth to be recorded in the register since such entries would not be needed for legal purposes at some later date. In order to be confident that all burials appear in a register it would be useful to have one that lists stillbirths, but this practice was very rare during this period.

The value of Dade registers lies in the wonderful additional details they contain, but historical demographers should not be lulled into believing that

their coverage of the population is much better than ordinary parish registers in the same period. The examination of other registers in this format has the potential to yield a rich vein of information about demographic patterns in the late eighteenth century but, as with all parish registers, some consideration needs to be given to these registers' accuracy prior to analysis.

Acknowledgements

NOTES

1. R. Bellingham, 'Dade parish registers', *Local Population Studies*, **73** (2004), 51–60.
2. R.A. Bellingham, 'Dade registers', *Archives*, **27** (2002), 134–47; W.J. Sheils, 'Mobility and registration in the north in the late eighteenth century', *Local population Studies*, **23** (1979), 42.
3. B. Whitehead ed., 'The parish register of St Olave, York 1650–1785', *Yorkshire Parish Register Society*, **158** (1993).
4. Sheils, 'Mobility and registration', 41–2. As soon as Dade took office a new register was purchased and detailed entries began to appear: see Whitehead, 'St Olave', 201, 236.
5. Whitehead, 'St Olave', 228, 234. Sarah Heels had previously given birth to a son, also called John, on 10 December 1779, who subsequently died on 30 October 1780. Her second son appears to have survived.
6. Only those who had been baptised could theoretically be interred in the parish churchyard. See the discussion in E.A. Wrigley and R.S. Schofield, *The population history of England 1541–1871. A reconstruction* (London, 1981), 96–102; C. Galley, N. Williams and R. Woods, 'Detection without correction: problems in assessing the quality of English ecclesiastical and civil registration', *Annales de Démographie Historique* (1995), 161–83.
7. These intervals are low by comparison with other examples in the period, but they are by no means the lowest: see B.M. Berry and R.S. Schofield, 'Age at baptism in pre-industrial England', *Population Studies* **25** (1971), 453–63. By contrast, death/burial intervals in St Olave were very short, with almost every burial taking place within 72 hours of death.
8. Galley, *The demography of early modern towns: York in the sixteenth and seventeenth centuries* (Liverpool, 1998), 91–100; 182–3. The IMR in St Olave between 1601 and 1640 was 256.
9. In registers where age at death is not given, this is often not the case. Note: a cohort IMR for 1785 could not be calculated since some infants born in 1785 would have died in 1786 and burials from this year were not available for analysis.
10. In registers that do not include age at death such burials would not be identified. They would therefore be excluded from the analysis and the IMR would be under-recorded.
11. There were at least another five poorhouses operating in the city: see P.M. Tillot ed., *A history of the County of Yorkshire: the City of York* (Oxford, 1961), 227.
12. E.A. Wrigley, R.S. Davies, J.E. Oeppen and R.S. Schofield, *English population history from family reconstitution* (Cambridge, 1997), 219 gives a national figure of 5.93 per cent for the period 1775–99.
13. Wrigley *et al., English population history*, 221–2. This assumption was based on nineteenth and early twentieth-century civil registration data.
14. Whitehead, 'St Olave', 271.
15. Comparing ages at death with those calculated by subtracting birth date from death date revealed that the stated ages were all accurate.
16. Wrigley *et al., English population history*, 225–39.
17. For a general discussion of the accuracy of parochial registration see R. Wall, 'English population statistics before 1800', *History of the Family*, **9** (2004), 81–95.
18. Whitehead, 'St Olave', 240, 254.
19. Quoted in Bellingham, 'Dade registers', 135. The need to provide accurate information about births, deaths and marriages in legal cases was a major factor in the replacement of the parochial registration system by a civil one, see E. Higgs, *Life, death and statistics* (Hatfield, 2004), 7–17.