

The Population History of Britain, 1538-1850.

Introduction

In 1981 E.A. Wrigley and R.S. Schofield published *The Population History of England 1541-1871*, which has come to be seen as the definitive history of population in the 330-year period between 1541 and 1871. It is based on the analysis of 404 parish registers, using monthly totals of births, deaths and marriages, ‘to determine population size, gross reproduction rates, expectation of life at birth, age structure and net migration totals.’¹ This is a major achievement given the scale and scope of the research.

It involved counting back events from the 1871 Census, using the data from parish register returns. Criticisms of the methods and findings of the study have been addressed by Wrigley and Schofield in a second edition of their work.² This includes a discussion of the work of Lindert, as well as research by Lee and Oeppen on inverse and back projection. The latter studies largely confirm the overall conclusion of Wrigley & Schofield’s work,³ with the most important finding being that population increase at the end of the eighteenth and beginning of the nineteenth century was the result of increases in fertility, ‘driven by changes in nuptiality, rather than movement in mortality.’⁴

Lindert has argued that the number of births in the period before 1800 was significantly higher than represented by Wrigley and Schofield.⁵ This is important for the estimates of fertility in the late eighteenth and early nineteenth centuries.

Wrigley and Schofield state that ‘Malthus’s original insight formed the basis of our thinking’⁶, with increases in fertility driven by the growth of real incomes at the end of the eighteenth century onwards.⁷ It should be noted however that Malthus stressed the reduction in mortality rather than the increase in fertility in explaining the growth of population in the period after 1780 in England.⁸

Regarding mathematical models of the type used by Wrigley & Schofield, Thomas Piketty has claimed that ‘for far too long economists have sought to define themselves in terms of their supposedly scientific method. In fact, those methods rely on an immoderate use of mathematical methods ... the new methods often lead to a neglect of history and the fact that historical experience remains our principal source of knowledge.’⁹

Economic historians have adopted such mathematical models to establish long-term growth in the economy, but these have resulted in significantly different conclusions. For example, there is fundamental disagreement between Gregory Clark on the one hand, and Stephen Broadberry and colleagues on the other about long-term growth in England in the

¹ Frontispiece of E.A. Wrigley & R.S. Schofield, *The Population History of England 1541-1871: A Reconstruction*, 1989.

² Ibid.

³ Ibid, p. xvii.

⁴ Ibid, p. xxviii.

⁵ P.H. Lindert, ‘English living standards, population growth, and Wrigley-Schofield’, *Explorations in Economic History*, 20, 1983, p. 145.

⁶ Wrigley & Schofield, *The Population History*, p. xxvi.

⁷ Ibid, p. xxii.

⁸ P. E. Razzell, *Essays in Historical Sociology*, 2021, p. 147, in *Peter Razzell Online*.

⁹ T. Piketty, *Capital in the Twenty-First Century*, 2013.

period between the fifteenth and early nineteenth century. The former concluded that there was no significant change in per capita incomes in this period, whereas Broadberry et.al. have concluded that GDP per head approximately doubled in the same period.¹⁰ The different conclusions are the result of disagreements on estimates of population, the impact of technology, employment levels, the incomes of women and children, changing occupational structure, and the effect of enclosures on the demand for labour.

Wrigley and colleagues have added to the mathematical arguments of the *Population History* with detailed reconstitution work on 26 English parishes for the period 1580-1837.¹¹ Their main finding was a reduction in the mean age of marriage of women of about 2.5 years, supporting the argument about the importance of increases in fertility at the end of the eighteenth century. The reconstitution work was initiated by Wrigley in a study of the parish of Colyton in Devonshire.¹² There are however major problems with the data from this study. Applying same-name analysis – to be discussed later in greater detail – to Colyton data revealed the following pattern:

Table 1: Analysis of Burial Registration of Same-Name Siblings in Colyton, 1538-1851.¹³

<i>Period</i>	<i>Total Number of Cases</i>	<i>Cases Traced in the Burial Register</i>	<i>Proportion of Untraced Cases</i>
1538-1600	95	63	35%
1601-1650	121	71	41%
1651-1700	114	86	25%
1701-1750	84	54	36%
1751-1800	94	60	36%
1801-1851	115	98	15%
Total	623	432	31%

There is no linear trend in the proportion of untraced cases, but there was a sharp improvement in burial registration during the period 1801-1851. This can be compared to parish register entries with civil register returns for the period 1837-1850.¹⁴ According to the Colyton civil register, there were 199 children dying under the age of ten in 1837-50, of which 170 were registered in the Anglican parish register, an omission rate of 15%.

This figure is identical to the 15% of same-name case children not traced during 1801-1851. It is also possible to compare evidence on people leaving wills with entries in the burial register, and of 124 wills registered in Colyton in 1553-1773 – 28% - could not be found in the burial register – slightly smaller than the untraced cases in 1538-1800 in Table 1. This and the above research is an example of the triangulation of data, a methodology appropriate for historical demographic research.

The above research reveals major problems with Wrigley’s analysis of Colyton data, a problem which will be further revealed in a later discussion of reconstitution work.

¹⁰ G. Clark, ‘The long march of history: farm wages, population, and economic growth, England, 1209-1869’, *Economic History Review*, 60, 2007, pp. 97-135; S. Broadberry, B.M.D. Campbell, A. Klein, M. Overton and B. Van Leewen, *British Economic Growth, 1270-1870*, 2015.

¹¹ E.A. Wrigley, R.S. Davies, J.E. Oeppen and R.S. Schofield, *English Population History from Family Reconstitution 1580-1837*, 1997.

¹² See *Ibid*, p. 633 for Wrigley’s work on Colyton.

¹³ P.E. Razzell, *Essays in English Population History*, 1994, p. 188, in *Peter Razzell Online*.

¹⁴ I was allowed special access to the original returns in the civil register by the local registrar.

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In 1965, H.J. Habakkuk presented a ‘heroically simplified version of English economic history’:

long-term movements in prices, in income distribution ... in real wages ... are dominated by changes in the growth of population. Rising population: rising prices ... low real incomes for the mass of the population ... this might stand for a description of the thirteenth century, the sixteenth century, and the early seventeenth, and the period 1750-1815. Falling or stationary population with ... higher mass incomes might be said to be characteristic of the intervening periods.¹⁵

This statement assumes that population growth was independent of economic development, an assumption challenged by the Cambridge Group, who argued as we have seen that population increase was largely fuelled by economic development.¹⁶

The assumption that real incomes rose during the eighteenth century is open to doubt. Attempts have been made by economic historians to measure average height as a proxy for real income.¹⁷ However, there is controversy about the value of height as a measure of the standard of living, and as Cormac O’Grada has written ‘time-series inferences from height data therefore remain in our view a hazardous occupation and it may well be that anthropometric evidence will not decide the long-simmering standard of living controversies either.’¹⁸

There is also evidence that the economy was not the main determinant of mortality and population growth. Although Ireland lagged severely behind England in terms of real incomes, Irish population increased more rapidly than the English in the eighteenth century.¹⁹ The following table summarises Connell’s estimates of population growth during this period.

Table 2: Estimated Population Growth in Ireland and England & Wales, 1697-1791.²⁰

<i>Period</i>	<i>Ireland</i>	<i>Period</i>	<i>England & Wales</i>
1697	2,167,000	1700/1	5,475,000
1754	3,191,000	1750/1	6,467,000
1791	4,753,000	1790/1	8,675,000

The increase in population between 1697 and 1754 in Ireland was 47.3%, whereas the equivalent figure for England & Wales between 1700/1 and 1750/1 was 18.1%. Likewise, the increase in Ireland between 1754 and 1791 was 49.0%, and England & Wales between 1750/1 and 1790/1 was 34.1%.

Doultry, Dickson and O’Grada have sought to revise the eighteenth century population figures for Ireland by statistically re-examining the hearth tax totals through regional analysis. Their conservative estimates of population growth in tens of thousands are as follows:

¹⁵ Razzell, *Essays in Historical Sociology*, p. 222.

¹⁶ Wrigley and Schofield, *The Population History*.

¹⁷ Econometric analysis can be misleading in the study of heights. In research carried out by Voth and Leunig in an article on smallpox and height, they coded “no smallpox” as a result of blank pages, relying on computerised data and not original source material. See Peter Razzell, ‘Did smallpox reduce height?’, *Economic History Review*, 51, 1998, pp. 351-359.

¹⁸ Cormac O’Grada, ‘Anthropometric History. What’s in it for Ireland?’, *Histoire & Mesure*, Volume 11, 1996, p.160.

¹⁹ For a more detailed discussion of Ireland’s demographic history see P. E. Razzell, ‘Population growth and the development of capitalism in Britain, 1550-1850’, 2024, in *Razzell Academia Online*.

²⁰ K.H. Connell, *The Population of Ireland 1750-1845*, 1950; J. Rickman, *Observations on the Results of the Population Act, 41 Geo III*, p. 91.

Table 3: Estimated Irish Population Size 1706-1821²¹

<i>Date</i>	<i>Estimated Population Size, Tens of Thousands</i>
1706	206
1753	257
1791	442
1821	680

The proportionate increases are somewhat less than those estimated by Connell for 1706 to 1753 – 24.8% – but those for 1753 to 1791 – 72% – are significantly higher. The increase between 1791 and 1821 was also a high of 53.8%. The authors conclude ‘a very rapid secular rate of increase by European standards is implied. In demographic history at least, Ireland seems to remain an outlier.’²²

The figures must not be taken too literally, but they do indicate the scale of the different population histories of Ireland and England & Wales. Ireland was much poorer than England & Wales and as Braudel has written ‘the Irish peasant was reduced to severe poverty, aggravated by a rising population.’²³ The Bishop of Cloyne wondered ‘how a foreigner could possibly conceive that half the inhabitants are dying of hunger in a country so abundant in foodstuffs,’²⁴ while ‘a famine of 1740-41 caused the death of a third of the population in some areas.’²⁵

Ireland’s population grew much more rapidly than England’s, and this was probably due to ‘a relatively nutritious diet (potatoes)²⁶ and some degree of epidemiological isolation.’²⁷ There is some evidence that Irish population growth was fuelled by early marriage and a rise in fertility. And this was the conclusion of K.H. Connell who argued that the great accelerations in population at the end of the eighteenth century was due ‘very likely to the increase of fertility that followed earlier marriage.’²⁸ There were certainly a number of contemporary witnesses claiming that the Irish married very early, and Connell wrote that ‘according to an official summary of the immense mass of evidence presented to the Poor Inquiry Commission of 1836, men in Galway usually married when they were between 14 and 21; in Leitrim between 16 and 22; in Mayo and Sligo usually under 20, and in King’s County between 17 and 20.’²⁹

However, Michael Drake challenged this analysis, examining the statistics for the 1830s and concluded that there was no trend towards a lower age at marriage in the 1830s.³⁰ Additionally, according to the Irish Census of 1841, the distribution of the unmarried

²¹ Stuart Daultrey, David Dickson and Cormac O’Grada, ‘Eighteenth century Irish population: new perspectives: from 1706 to 1753 from old sources’, *Journal of Economic History*, Volume XXL, 1981, p. 624,

²² *Ibid.*, p. 628.

²³ Ferdinand Braudel, *Civilization and Capitalism*, Volume 3, 1985. p. 373.

²⁴ *Ibid.*

²⁵ J.H. Plumb, ‘The Irish Empire’, *England in the 18th Century*, 1973.

²⁶ See Arthur Young, ‘Section 5-6: Of the Tenantry of Ireland; Of the Labouring Poor’, *A Tour in Ireland, Made in the Years 1776, 1777, and 1778*, 1780. The potato was introduced into Ireland in the sixteenth century and became widespread by the eighteenth. See ‘History of the Potato in Ireland’, World Potato Congress 2022, *Online*.

²⁷ Overview of the work of Cormac O’Grada, *Online*.

²⁸ K.H. Connell, *The Population of Ireland, 1750-1845*, 1950, p. 248.

²⁹ *Ibid.*; K.H. Connell, ‘Peasant marriage in Ireland: its structure and development since the famine’ *Economic History Review*, XIV, 1961-2, p. 520.

³⁰ M. Drake, ‘Marriage and population growth in Ireland, 1750-1845’, *Economic History Review*, Volume XVI, 1963-64.

amongst various age groups was very similar to that in England at about the same time.³¹ According to the 1841 Irish Census there were only 53 married men under the age of 17 in the whole of Ireland.³² It is therefore unclear what the age of marriage was in Ireland, given the conflict between literary and census evidence.

The geographical isolation of the Irish population can be documented by demographic data. The following Table summarizes an analysis of Quaker reconstitution schedules, using same name correction ratios.³³

Table 4: Estimated Quaker Infant Mortality (Per 1000) in England and Ireland, 1650-99.

<i>Place</i>	<i>Infants At Risk</i>	<i>Infant Deaths</i>	<i>Same-Name Ratio</i>	<i>Estimated IMR</i>
London	330	113	12/12	342
Bristol & Norwich	691	117	111/86	219
Provincial England	2781	293	304/181	177
Dublin	591	149	45/38	299
Cork, Wexford, Waterford & Limerick	966	131	54/44	166
Rural Ireland	1953	120	75/56	82

Quaker infant mortality rates in Irish rural areas were about a quarter of those in London and Dublin in 1650-99. The differentials narrowed somewhat during the eighteenth century, as revealed by the following Table, but by the nineteenth century London's Quaker infant mortality rate was over three times of that in Irish rural areas.

Table 5: Estimated Infant Mortality (Per 1000) Amongst Quakers in England & Ireland, 1650-1849.

Period	London	Bristol & Norwich	Provincial England	Dublin	Cork. Wexford. Waterford & Limerick	Rural Ireland
1650-99	342	219	177	299	166	82
1700-49	269	216	200	196	160	118
1750-99	166	158	124	164	151	82
1800-49	132	107	69	107	62	41

This can be further clarified by the Irish 1841 Census which compared the mortality rates of urban and rural districts.

³¹ Razzell, *Essays in English Population History*, p. 65.

³² *Population Census of Ireland, 1841*, Parliamentary Papers, 1843, XXIV, p. 439.

³³ I have analysed the original schedules compiled by Vann and Eversley which were deposited in Friend's House in London. See R.T. Vann and D.E.C. Eversley, *Friends in Life and Death*, 1992 for a description of their research.

Table 6: Agee Specific Death Rates According to the 1841 Irish Census.³⁴

<i>Age Group (Years)</i>	<i>Number Living in Urban Areas</i>	<i>Deaths Per 1000</i>	<i>Number Living in Rural Districts</i>	<i>Deaths Per 1000</i>
Under 1	50,369	138.02	311,055	81.35
2-5	105,676	45.49	779,313	17.22
6-15	243,551	9.78	1,813,605	4.51
16-25	242,237	9.90	1,403,660	6.56
26-35	181,208	13.34	973,169	8.34
36-45	132,481	18.42	696,961	11.43

Mortality in the urban areas was up to twice as high as in the rural districts, with 1,135,465 people living in urban areas and 7,039,659 in the rural districts. The great majority of Irish rural inhabitants lived in great squalor. For example, according to a Scottish agriculturalist ‘a large proportion of the peasantry live in a state of misery ... Their cabins scarcely contain an article that can be called furniture, in some families there are no such things as bedclothes ...’³⁵

Likewise, Cambell wrote of the Irish in 1777:

the manner in which the poor of this country live, I cannot but help calling beastly. For upon the same floor, and frequently without any partition, are lodged the husband and wife, the multitudinous brood of children, all huddled together upon the straw or rushes, with the cow, the calf, the pig, and the horse, if they are rich enough to have one.³⁶

Connell concluded that ‘almost every reference to the subject by travellers and doctors underlines the filthiness both of the persons of the mass of the Irish and the interior and surroundings of their cabins ...’³⁷ The result was the prevalence of typhus, griping diarrhoeas and epidemic dysenteries. However, as Connell also concluded, ‘the years of rapid population increase, it is true were free from serious epidemics’.³⁸

Ireland’s rural lower mortality was probably the result of its geographical isolation, avoiding high levels of infection. They lived in scattered settlements in a country that was separated from England and the continent of Europe.³⁹ Freeman has estimated that in 1841 only about 20 per cent of the Irish population lived in villages and towns, the rest in isolated cabins.⁴⁰

There were similar urban/rural infant mortality gradients in England in the eighteenth century. The infant mortality rate in sixteen London parishes in 1700-49 was 409/1000, compared to 181/1000 in eighteenth English parishes – over twice as high.⁴¹

³⁴ Connell. *The Population of Ireland*, p. 193.

³⁵ Ibid, p. 58.

³⁶ Ibid.

³⁷ Ibid, p. 187.

³⁸ Ibid, p. 257. Some of the decline in infant and child mortality would have been the result of the practice of smallpox inoculation in rural Ireland. See P.E. Razzell, ‘Population growth and economic change in eighteenth and early nineteenth-century England and Ireland’, in E.L. Jones and G.E. Mingay (eds), *Land, Labour and Population in the Industrial Revolution*, 1967, pp. 270-273.

³⁹ The “urban penalty” in mortality may have been a factor in the decline of the Roman Empire. Philip Matyszak has written: ‘historians blamed the fall of Rome on depopulation, pointing to references in the ancient texts to plagues and *agri deserti* (‘abandoned fields’). Certainly, by the end of the Empire, a few thousand men counted as a substantial army whereas in the glory days of the Republic a single legion contained 6,000 men.’ The invading Huns, Visigoths and other barbarian tribes lived in more rural environments and therefore would not have been prone to high levels of infection. See Philip Matyszak, *The Enemies of Rome: From Hannibal to Attila the Hun*, 2023, p. 283.

⁴⁰ T.W. Freeman, *Pre-Famine Ireland: A Study in Historical Geography*, 1957, p. 27.

⁴¹ Razzell, ‘Population growth and the development of capitalism’, pp. 3, 4.

There was a marked increase in poverty amongst labourers and other impoverished groups in England at the end of the eighteenth century and first half of the nineteenth. Contrary to the assumption of growing real incomes in the eighteenth century, there is evidence of a marked increase in poverty amongst labourers and other poor groups. Keith Snell has concluded from a review of the evidence that ‘there was no doubt among contemporaries that weekly real wages fell in the southern (and many Midland) counties.’⁴² He listed in support of this conclusion the writings of D. Davies, S.G. & E.O.A. Checkland, Marshall, J. Howlett, G. Dyer, W. Friend, Adam Smith, C. Vancouver, G.D.H. & M. Cole, G. Glover, T.P. MacQueen, R. Pahsley, T. Postans, Arthur Young, and J. Wedge.⁴³ He added that ‘the list could be considerably extended, and there were virtually no contrary opinions.’⁴⁴

This conclusion can be illustrated by one of the most detailed accounts provided by the Reverend John Howlett, who had been the Vicar of Great Dunmow in Essex for about 50 years. Describing the condition of labourers he wrote in 1796:

for the last forty or fifty years, some peculiarly favoured spots excepted, their condition has been growing worse and worse, and is, at length, become truly deplorable. Those pale famished countenances, those tattered garments, and those naked shivering limbs, we so frequently behold, are striking testimonies of these melancholy truths.⁴⁵

Howlett compiled figures of income and expenditure, using details of wages from farmers’ wage books and local knowledge of family incomes and consumption, for the two ten-year periods, 1744-53 and 1778-87. The annual expenditure per family in the first period was £20.11s.2d and earnings £20.12.7d, leaving a surplus of 1s.5d. In the second period the figures were £31.3s.7d and £24.3.5d, leaving a deficit of £7.0s.2d.⁴⁶ Howlett concluded that

Of this deficiency the rates have supplied about forty shillings; the remaining £5 have sunk the labourers into a state of wretched and pitiable destitution. In the former period, the man, his wife, and children, were decently clothed and comfortably warmed and fed: now on the contrary, the father and mother are covered with rags; their children are running about, like little savages, without shoes or stockings to their feet; and, by day and night, they are forced to break down the hedges, lop the trees, and pilfer their fuel, or perish with cold.⁴⁷

This conclusion was supported by Admiral Lord Nelson. In a letter to the Duke of Clarence in 1790 he described the condition of the poor in Norfolk:

the poor labourer [is] really in want of everything to make life comfortable. Hunger is a sharp thorn, and they are not only in want of food sufficient, but of clothes and firing ... [they] cannot afford candles, soap or shoes, and for drink nothing but water, for beer our poor labourers never taste.⁴⁸

⁴² K. M, Snell, *Annals of the Labouring Poor*, 1987, p. 25.

⁴³ Ibid,

⁴⁴ Ibid.

⁴⁵ J. Howlett, *An Examination of Mr Pitt’s Speech in the House of Commons on 12 Feb. 1796, Relating to the Condition of the Poor*, 1796, p. 2. For a similar account of the condition of labourers, see D. Davies, *The Case of Labourers in Husbandry*, 1796, p. 7.

⁴⁶ Howlett, *An Examination* p. 48.

⁴⁷ Ibid, p. 49. Enclosure may have played a role in generating surplus labour, but this is a controversial thesis. See J.D. Chambers and J.D. Mingay, *The Agricultural Revolution, 1750-1850*, 1966.

⁴⁸ Letter from Nelson to the Duke of Clarence, 1790.

Charles Shaw in his autobiography described the conditions of workers in the Staffordshire Potteries in the 1830s and 1840s:

All the great events of the town took place ... [in] the marketplace. During the severity of winter, I have seen one of its sides nearly filled with stacked coals. The other side was stacked with loaves of bread, and such bread. I feel the taste of it even yet, as if made of ground straw, and alum, and Plaster of Paris. These things were stacked there by the parish authorities to relieve the destitution of the poor. Destitution, for the many, was a chronic condition in those days, but when winter came in with its stoppage of work, this destitution became acute, and special measures had to be taken to relieve it. The crowd in the marketplace on such a day formed a ghastly sight. Pinched faces of men, with a stern, cold silence of manner. Moaning women, with crying children in their arms, loudly proclaiming their sufferings and wrongs. Men and women with loaves or coals, rapidly departing on all sides to carry some relief to their wretched homes – homes, well, called such ... This relief, wretched as it was, just kept back the latent desperation in the hearts of these people.⁴⁹

This poverty was also a factor in the revolutionary condition of Buckinghamshire in the 1830s:

Numbers of men were out of work, bread was dear, and the Chartist agitation was violently active. Copies of the *Northern Star* and other Chartist papers found their way into every workshop. Meetings were held almost every evening and on Sundays. Some of the speeches advocated physical force as the only remedy ... Lectures on Peterloo, the Bristol Riots, the Monmouth Rising, and the Pension List were common. Bad trade, low wages, and dear bread were the stimulating causes of widespread discontentment. Men were driven to their lowest depth of hatred of the governing classes... the country was passing through the throes of a political convulsion which was fast ripening into a revolution. The mechanics institute gradually degenerated into a violent revolutionary club.⁵⁰

The History of the Age of Marriage

There is also a problem with the Cambridge Group's assumptions about the age of marriage. They found from their reconstitution work that the mean age of marriage of women had fallen by two-and-a-half years during the late eighteenth century, which is one of the central findings for their argument about the importance of increasing fertility in the eighteenth century.

It is difficult to establish reliable data for many demographic variables in the eighteenth century, and it is necessary to use all available material, which includes marriage licences and other more local sources where necessary. According to marriage licences in Nottinghamshire during the seventeenth century the average age of spinsters marrying labourers and husbandmen was over 26 years, whereas the average for yeomen, gentlemen and professionals was about 24 years.⁵¹ This conclusion is supported by the analysis of marriage licences for the Archdeaconry of Chichester:

Table 7: Marriage Age of Spinsters Marrying Bachelors, 1754-1769, 1770-95.⁵²

<i>Period</i>	<i>Labourers</i>		<i>Yeomen, Gentlemen & Professionals</i>	
	Number	% Under 21	Number	% Under 21
1754-69	142	9%	142	22%
1770-99	169	25%	169	14%

⁴⁹ C. Shaw, *When I Was a Child*, 1980, pp. 42, 43.

⁵⁰ J. Buckmaster, *A Village Politician*, 1982, pp. 98, 99, 124, 153.

⁵¹ P.E. Razzell, *Population and Disease: Transforming English Society, 1550-1850*, (Peter Razzell on Goggle), p. 128.

⁵² *Ibid*, p. 244,

In the earlier period 1754-69 labourers married much later than yeomen, gentlemen and professionals, but by 1770-99 the position was reversed, with labourers marrying much earlier and the elite group much later. The latter differential was maintained throughout the nineteenth and into the twentieth century. As the compiler of the 1911 Fertility Census wrote ‘generally speaking, the proportion of early marriage increases and of late marriage decreases as we descend the social scale.’⁵³

Malthus argued that there had been a diminution in the frequency of marriage during the eighteenth century:

The gradual diminution and almost total extinction of the plagues which so frequently visited Europe, in the seventeenth and the beginning of the eighteenth centuries, produced a change [in the incidence of marriage] ... in this country [England] it is not to be doubted that the proportion of marriages has become smaller since the improvement of our towns, the less frequent return of epidemics, and the adoption of habits of greater cleanliness.’⁵⁴

This conclusion is supported by data from court records:

Table 8: Proportion of Female Deponents Single in the London Consistory Court, 1583-1817.⁵⁵

<i>Period</i>	<i>Age Group – Proportion Single</i>			
	15-24	25-34	35-44	45+
1586-1611	62%	15%	1%	0%
1703-1713	72%	25%	7%	4%
1752-1783	77%	43%	14%	5%
1792-1817	76%	53%	13%	15%

There were important reductions in the frequency of marriage in all age groups during the eighteenth century, and this was also the case in Yorkshire and other areas of England.⁵⁶ These falls in the frequency of marriage are also to be found in data from burial registers. The following table summarizes information from twenty-three Bedfordshire burial registers which list the marital status of those buried.

Table 9: Proportion of Spinsters Listed in Twenty-Three Bedfordshire Burial Registers, 1695-1704 and 1795-1804.

<i>Period</i>	<i>Number of Spinsters</i>	<i>Total Known Cases</i>	<i>Proportion of Spinsters</i>
1695-1704	26	817	3%
1795-1804	90	853	11%

There was an increase of eight per cent in the number of spinsters in the period between the ends of the seventeenth and eighteenth centuries, confirming the trend of diminishing marital

⁵³ *Census of England & Wales, 1911, Volume XIII, p. lxxxix*

⁵⁴ Razzell, *Population and Disease*, p. 149.

⁵⁵ P. E. Razzell, *Mortality, Marriage and Population Growth in England, 1550-1850*, 2016, p. 67 in *Peter Razzell Online*.

⁵⁶ *Ibid*, pp. 60-70. Szreter and Garrett have argued that there was a decline in the frequency of marriage from the middle of the eighteenth century onwards. S. Szreter and E. Garrett, ‘Reproduction, compositional demography, and economic growth: family planning in England before the fertility decline’, *Population and Development Review*, 2000, p. 67.

frequency. The decline in the frequency of marriage would more than offset the reduction in age of marriage, but more data is needed on marriage frequency to establish this as a reliable conclusion.⁵⁷

Malthus argued theoretically that population had grown in the eighteenth century largely as a result of increasing fertility. However, he qualified this conclusion by noting that in England ‘the more rapid increase of population, supposed to have taken place since the year 1780, has arisen more from the diminution of deaths than the increase of births.’⁵⁸

The population growth that resulted from this fall in mortality resulted in pauperisation of the poor. This led to demoralisation and early marriage and the growth of fertility. Malthus described this in his discussion of England’s demographic experience:

It is not ... among the higher ranks of society, that we have most reason to apprehend the too greater frequency of marriage ... [it is] squalid poverty, particularly joined with idleness, [which] is a state the most unfavourable to chastity ... The labouring poor, to use a vulgar expression, seem always to live hand to mouth ... The desire of immediate gratification, and the removal of the restraints to it from prudence ... prompt universally to early marriage.⁵⁹

A similar process occurred in Ireland. The Irish Poor Inquiry Commission was told by a Catholic curate from Mayo that ‘small holders are induced to marry by feeling that their condition cannot be made worse, or, rather they know that they can lose nothing, and they promise themselves some pleasure in the society of a wife.’⁶⁰ Likewise, ‘from Kilkenny – as indeed, from most other counties – there came almost the same story: labourers get married under the idea they cannot make their condition worse than it is.’⁶¹

The Reliability of Parish Registration

It was common in England to give the name of a dead child to a subsequent sibling of the same sex. This can be illustrated by the example of one London family published by the genealogist Percival Boyd and traced in the 1695 London Marriage Duty Listing.

Table 10: The Family of Samuel and Sarah Fowler, Tyler and Bricklayer, of St. Antholin’s, London. ⁶²

<i>Name Of Child</i>	<i>Date Of Baptism</i>	<i>Date Of Burial</i>
Thomas	05/07/1677	04/01/1721
Samuel	04/05/1679	29/04/1681
William	08/01/1683	03/06/1708

⁵⁷ The analysis of more burial registers with information on marital status and preferably age would further clarify the subject.

⁵⁸ Razzell, *Essays in Historical Sociology*, p. 147.

⁵⁹ P. E. Razzell, *Population and Disease: Transforming English Society, 1550-1850*, pp. 240-41, in *Peter Razzell Online*.

⁶⁰ Razzell, ‘Population growth and the development of capitalism’, p. 11.

⁶¹ *Ibid.*

⁶² For the background to this table see P.E. Razzell and C. Spence, ‘The history of infant, child and adult mortality in London’, *The London Journal*, 2007, p. 274, in *Peter Razzell Online*.

Samuel	10/05/1685	15/02/1688
John	07/08/1687	-
John	12/05/1689	09/10/1692
Sarah	22/04/1691	06/02/1748
Mary	18/07/1693	12/11/1694
John	21/11/1695	-
<i>1695 Marriage Duty Listing: Samuel Fowler, Wife Sarah, Son James, Son Thomas, Son William, Daughter Sarah. Of St. Antholin's Parish.</i>		

Of the three-baptism same-name cases, high-lighted in bold, two of them were traced in the burial register. The second same-name case – John baptised on the 7th of August 1687 – was found neither in the burial register nor in the 1695 Marriage Duty Listing, indicating that he probably died without being registered. (The last John was baptised in late 1695 and therefore did not appear in the Marriage Duty Listing made before that date).

The same-name method allows for the correction of burial under-registration by multiplying the number of same-name cases divided by the number of such cases found in the burial register. In the case of the Fowler family the correction ratio is 3/2. This inflation ratio corrects both for non-registration due to omission from the burial register, as well as burial in neighbouring parishes and elsewhere, accounting for all forms of under-registration. The repetition of the name Samuel in the burial register indicates a burial same name pattern. He was baptized in 1685 before he was buried in 1688 – in effect showing that baptism registration was perfect.

Data on the frequency of same naming from the sixteenth to the nineteenth century is suggested by the following Table

Table 11: Proportion of Eligible Families Using Same Names in Six Reconstitution Parishes, 1541-1837.⁶³

<i>Period</i>	<i>Number of Eligible Cases</i>	<i>Proportion Using Same Names %</i>
1541-1600	293	50.1
1601-1650	330	57.9
1651-1700	291	72.9
1701-1750	339	67.8
1751-1800	411	65.6
1801-1837	270	59.5

The data only covers six parishes, but it indicates that many families used same names throughout the parish register period. There was something of an inverted U-Curve distribution in the proportions using same-names, but there is a sufficient majority to make same-naming a valuable basis for assessing the reliability of parish registers.

⁶³ Eligible families are those with at least two baptised children of the same sex, to the same parents. The table is based on the analysis of original reconstitution schedules for Aldenham, Bridford, Austrey, Dawlish, Hartland and Colyton. See Razzell, *Population and Disease*, p. 9.

There has been a criticism of the technique on the grounds that there were living same-name children. A study of Wills indicates the following pattern of living same name children.

Table 12: Living Same-Name Children in English Wills, 1439-1699.⁶⁴

<i>Period</i>	<i>Number of Living Same-Name Children</i>	<i>Total Number of Siblings</i>	<i>Proportion of Living Same-Name Children</i>
1439-1547	77	1249	6.20%
1558-1590	10	713	1.40%
1591-1649	22	2638	0.80%
1650-1699	4	985	0.40%

There were significant numbers of living same-name children in the fifteenth and early sixteenth century, although some of them may have been the result of stepbrothers and stepsisters. After 1558 there were very few living same-name children, some of whom might have been stepchildren. Houlbrooke has argued that this was the result of the aftermath of the Reformation:

The greater variety of opinion about the bestowal of names which prevailed after the Reformation gave parents more freedom to follow their own inclinations. One result was that the bestowal of the same name on more than one living child became much less frequent from the sixteenth century onwards. But in many cases parents continued to give babies the same name as older siblings who had died.⁶⁵

The progressive reduction of living same-name children may also have been the result of the introduction of parish registration, making it difficult to have two living same name children.

The only complete way of examining the reliability of data on same names is to study local censuses which indicate the status of children and parents. For the late seventeenth century, it is possible to examine systematically the question of living same-name siblings through the analysis of various enumerations taken under the 1695 Marriage Duty Act.⁶⁶ A study was made of eighteen census-type listings covering a total of 6,162 cases. The areas covered were the City of London (1695), Bristol, Gloucestershire, (1696). Goodnestone, Kent (1676), Clayworth, Nottinghamshire (1676 and 1688), Lichfield, Staffordshire (1697), Lyme Regis, Dorsetshire (1696, 1698 and 1703), Swindon, Wiltshire (1697 and 1702), Wanborough, Wiltshire (1697 and 1702), New Romney, Kent (1696 and 1699), Melbourne, Derbyshire (1695), and St. Mary's, Southampton, Hampshire (1695 and 1696). There were 0.15 per cent of children with the living same name children, almost exclusively in the City of London and Bristol.⁶⁷

Galley, Garrett, Davies and Reid have argued that the London and Bristol censuses

⁶⁴ Data taken from P.E. Razzell, 'Measurement of the reliability of parish registration through same-name methodology', p.2, in *Peter Razzell Online*.

49. R.A. Houlbrooke, *The English Family 1450-1750*, 1984, pp 131-32.

⁶⁶ See Razzell, *Population and Disease*, p. 10.

⁶⁷ P.E. Razzell, 'Living same-name siblings and English historical demography; a commentary', *Local Population Studies*, 2011, p. 77, in *Peter Razzell Online*.

provide convincing details of living same-name children.⁶⁸ However an examination of the original manuscript censuses, along with data on baptisms, reveals that all these cases are questionable on grounds of transmission errors and other problems.⁶⁹

It is possible to examine this issue further through the study of nineteenth century censuses, with existing research on 45 parishes covered by census/ baptism registers.⁷⁰ The names of 10,954 people living in these parishes were selected from the household schedules of the 1851 Census and found to include no living full same-name cases. In most of these censuses there are references to stepbrothers and sisters sharing the same forename, but these can be recognized by their different surnames or other information in the censuses. Also, in the nineteenth century there are cases of living siblings sharing one common forename (for example, Edward James and Edward George), but no cases have come to light where names are identical. It is therefore important for same-name research that only siblings sharing the same parents and with identical names are selected for study.

For research on the reliability of birth registration it is necessary to locate burial same-name children and then search for the baptism of the second same-name child. For death registration the reverse is the case: location of same-name children in baptism registers searching for the burial of the first same-name child. There were many more cases in the evaluation of death registration because of the use of baptism registers to select the same-name cases, whereas there were many fewer cases in selection from burial registers.

Research using same-name methodology carried out on groups of parishes used in previous work reveals the following pattern of birth and death registration.

Table 13: Estimated Under-Registration of Births and Deaths in England, 1538-1837.⁷¹

<i>Period</i>	<i>Total Number of Births</i>	<i>Proportion of Births Not Registered (%)</i>	<i>Total Number of Deaths</i>	<i>% of Deaths Not Registered (%)</i>
1538-1599	95	39	358	34
1600-1649	236	36	465	31
1650-1699	230	30	617	27
1700-1749	424	21	858	22
1750-1799	546	32	594	27
1800-1837	133	30	451	23

The data from this table support Lindert's argument that there were greater numbers of births in the pre-1800 period than allowed for by the Cambridge Group. There were also geographical and occupational associations with parish register data. The following Table illustrates the influence of parish populations on the incidence of untraced births in baptism registers.

Table 14: Distribution of Untraced Cases by Population Size of Parish, 1851⁷²

	<i>Under 500 9 Parishes</i>	<i>500-999 7 Parishes</i>	<i>1000-1499 9 Parishes</i>	<i>1500-1999 10 Parishes</i>	<i>2000+ 10 Parishes</i>	<i>Total Sample</i>
Number of Untraced Cases	107	96	556	736	1508	3403

⁶⁸ C. Galley, E. Garrett, R. Davies and A. Reid, 'Living same-name siblings and English historical demography: a reply to Peter Razzell', *Local Population Studies*, 2011.

⁶⁹ Razzell, *Living same-name siblings*, pp. 78-80.

⁷⁰ See Razzell, *Essays in English Population History*, p. 93.

⁷¹ For death under-registration see Razzell, *Population and Disease*, p. 15. The figures for death registration are based on nine Cambridge Group reconstitution parishes. The figures for birth under-registration are based on the analysis of 69 burial and baptisms registers mainly from the counties of Bedfordshire and Derbyshire.

⁷² See Razzell, *Essays in English Population History*, p. 94.

Total Number of Cases	579	638	2003	2383	5351	10954
% of Untraced Cases	18.5%	15.0%	27.7%	30.9%	35.7%	31.0%

There was an almost linear increase in the proportion of untraced births by the size of the parish population, suggesting that larger populations made it more difficult to establish accurate registration. There was also some influence of occupation on registration accuracy.

Table 15: The Influence of Occupation on the Accuracy of Birth Registration.⁷³

	<i>Professional</i>	<i>Farmers</i>	<i>Shopkeepers</i>	<i>Servants</i>	<i>Labourers</i>
Number. of Untraced Cases	49	194	789	88	1282
Total Number of Cases	118	724	2454	244	4207
% of Untraced Cases	42.2%	26.8%	32.2%	36.1%	30.5%

The association of birth registration accuracy was not as strong with occupation as it was with population size, but there is some variation in the link as depicted in Table 15.

The main reason for omissions of birth and deaths was clerical negligence,⁷⁴ as indicated by Burn in his study of parish registers:

The custody of parish registers having been frequently committed to ignorant parish clerks, who had no idea of their utility beyond their being occasionally the means of putting a shilling into their own pockets for furnishing extracts, and at other times being under the superintendence of an incumbent, either forgetful, careless or negligent, the result has necessarily been, that many Registers are miserably defective, some having the appearance of being kept from month to month, and year to year, yet being deficient of a great many entries.⁷⁵

This clerical negligence appears to have been present from the sixteenth century onwards. For example, ‘in 1567 the incumbent of Tunstall, Kent, appeared to have tired of registering the Pottman family because of its concentration in the parish and simply stated in the register: “From henceforwd I omit the Pottmans.”’⁷⁶

Some of the neglect of burial registration was due to the non-payment of fees. In the Northamptonshire parish of Brington, ‘the very true reason why this register, is found as imperfect in some years as from 1669 to 1695 is because the parishioners could never be persuaded to take to see it done, nor the churchwardens as ye canon did require, and because they refuse to pay such dues to ye curate as they ought by custome to have payed.’⁷⁷

In 1702-03 ‘a committee of Convocation drew up a list of ecclesiastical offences notoriously requiring remedy, in which irregularity in keeping registers is prominent in the list of gravamina.’⁷⁸ Evidence for clerical negligence became abundant in the early nineteenth century. The *Gentleman’s Magazine* remarked in 1811 that ‘the clergyman (in many country places) has entered the names at his leisure, whenever he had nothing better to do, and perhaps has never

⁷³ Ibid, p. 105.

⁷⁴ Ibid, pp. 108-111.

⁷⁵ J.S. Burn, *The History of Parish Registers in England*, 1862, p. 18.

⁷⁶ Ibid, p. 41.

⁷⁷ J.C. Cox, *The Parish Registers of England*, 1910, pp. 20, 21.

⁷⁸ W.E. Tate, *The Parish Chest*, 1969, p. 49.

entered them at all.’⁷⁹ The *Report of the Select Committee on Parochial Registration in 1833* provided substantial evidence on the reasons for defective parish registration. One of the witnesses, Mr William Durrant Cooper, a solicitor, had extensive experience of tracing individuals in parish registers for property cases, and concluded that parish registration was ‘exceedingly defective ... [with] a very large number of marriages, deaths and baptisms not entered at all ... especially deaths.’⁸⁰ To illustrate this, he gave the following example:

On the sale of some property [in 1819] from Mr Cott to Lord Gage, it was necessary to procure evidence of the death of three individuals, Mrs Pace, Mr Tuchnott and Mrs Gouldsmith. They were at different places, all in Sussex; Mrs Pace was regularly entered; Mr Tuchnott was buried at Rodmell, about five miles from Lewes, and on searching for the register of burial we found no entry whatever. On making an inquiry in the churchyard of the sexton, he stated he recollected digging the grave, and the ceremony being performed; Mr Gwynne, the rector, whose neglect in that and other parishes is well known, had omitted to enter it ... Mrs Gouldsmith, who was buried at Waldron, in the same county, was not entered, but on going to the parish clerk, who was a blacksmith, he stated he recollected the circumstance, and accounted for her burial not being entered in this way: he said it was usual for him, and not the clergyman, to take account of the Burials, and he entered them in a little sixpenny memorandum book ... If it so happened that the fee [of one shilling] was paid at the time, as was the case with affluent persons, no entry would appear in his book, he only booked what was due to him, and as the clergyman entered the parish register at the end of the year from his book, and not at the time of the ceremony, all burials that were not entered in his book would not find their way into the register.⁸¹

Given the significant unreliability of parish registers, it is possible to triangulate findings on baptism and burial registration through comparison with other measures of reliability. The previous study of forty-five parishes selected from the 1851 Census with information on birth places was compared to the data from same-name research. The results are summarized in Table 16 below

Table 16: Estimated Proportions of Unregistered Births, 1761-1837.⁸²

<i>Period</i>	<i>Proportion of Unregistered Births Through Census Baptism Comparison</i>
1761-1800	32%
1801-1833	31%
<i>Period</i>	<i>Proportion of Unregistered Births Through Same Naming</i>
1750-1799	32%
1800-1837	30%

The proportions of unregistered births using the two different methods of estimating the accuracy of birth registration are virtually identical. The comparison should not be taken too literally as none of the figures above are based on random samples.

It is possible to use the inflation ratios from the census/baptism research to estimate birth rates from 1780 onwards, using the national baptism totals provided by Rickman.⁸³ This yields the following birth rates:

⁷⁹ Burn *The History*, p. 42.

⁸⁰ *Report of the Select Committee on Parochial Registration*, p. 24.

⁸¹ *Ibid*, 25.

⁸² For the figures for the census baptism comparison method see Razzell, ‘The evaluation’, p. 93.

⁸³ See B.R. Mitchell and Phyllis Deane, *Abstract of British Historical Statistics*, 1971, p. 28.

Table 17; Estimated Birth Rates of England & Wales, Per 1,000⁸⁴

1780-89	1790-99	1801-10	1811- 20	1821-30	1831-40
38.2	40.4	41.4	42.0	40.1	35.9

There is an increase in the birth rate between 1780 and 1820, but a significant decline after that date, suggesting that there was a growth in fertility during the period 1789-1820 but a decline after that date. In the light of evidence reviewed, this was likely to be the result of falling female marriage ages triggered by increasing pauperisation.

There was an even greater fall in the death rate during the period 1801-40.

Table 18: Estimated Death Rates for England & Wales, Per 1,000.⁸⁵

1801-10	1811-20	1821-30	1831-40
30.5	28,9	25.9	22.8

The fall in the death rate was over eight years between 1801 and 1840, significantly outweighing any increase in fertility. There were major falls in mortality in the eighteenth century, with infant and child mortality approximately halving between the middle and the end of the eighteenth century, with similar reductions in adult mortality.⁸⁶ The reasons for these falls are complex and include a range of health improvements, but also an autonomous reduction in disease incidence.⁸⁷

The age structure of the English population appears not to have significantly changed between the early eighteenth and nineteenth centuries,⁸⁸ suggesting that the rise in fertility played a relatively minor role in population growth compared to the reduction of mortality, but this conclusion requires further work on random samples to establish its validity.

The most significant finding from this research is the very high proportion of births unregistered between the sixteenth and eighteen centuries – between twenty-one and thirty-nine per cent. The Cambridge Group assumed that births registered through baptism were perfect between 1539 and 1550 with no births unregistered and only deteriorated slowly to a maximum of 9.5 per cent omitted by the end of the seventeenth century.⁸⁹ The discrepancy between this assumption and the figures in Table 13 poses major problems for Wrigley and Schofield's reconstruction of England's population history.

Existing data suggests that current same-name research is reliable given the triangulation of evidence.⁹⁰ However, with the digitisation of parish register and census data, it should be possible in future to create random samples for comprehensive same-name

⁸⁴ For the periods between 1801 and 1840 see Razzell, *Essays in English Population History*, p. 111. For the inflation ratios see *Ibid*, pp. 99, 100.

⁸⁵ *Ibid*, p. 114.

⁸⁶ Razzell., *Population and Disease*, pp. 70, 72, 74, 76, 80-83, 85, 91, 94-95, 99, 101, 103-05, 107-09, 111-12.

⁸⁷ *Ibid*, pp. 147-176.

⁸⁸ *Ibid*.

⁸⁹ Wrigley and Schofield, *The Population History*, pp. 537-541.

⁹⁰ See for example P.E. Razzell, *Mortality, Marriage and Population Growth in England, 1550-1850*, 2016, pp. 18, 23, in *Peter Razzell Online*; Razzell, *Population and Disease*, p. 13.

research. This will be important for a revised version of Britain's population history, which suggests that mortality rather than fertility was the key demographic variable in its history.