
Composing a National Picture from Local Scenes: New and Future Insights into the Fertility Transition

Eilidh Garrett and Alice Reid

Abstract

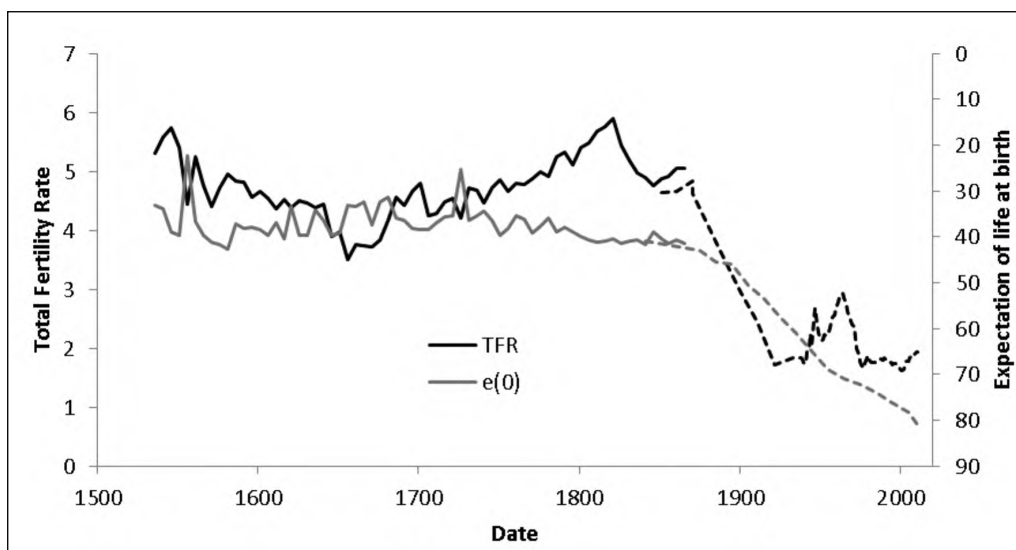
This contribution examines the relationship between local population studies and the national picture by considering the example of the Victorian fertility transition in England and Wales. It begins by summarising the history of research into the fertility decline. It then describes a recent project, the Atlas of Fertility Decline, which has used the newly available machine-readable data on individuals from the censuses from 1851 to 1911 to estimate fertility at the level of the registration sub-district. The results from the project can be used to highlight geographical variations in fertility at the regional and local level. Explaining the patterns observed, though, will require detailed local studies. New resources that are being opened up for researchers interested in such issues in their local community, in their county, in their region or in the nation as a whole, make the pursuit and attainment of answers possible. New light can be thrown on local scenes that will each add a piece of the jigsaw which, when completed, will bring a whole new level of understanding of the complex puzzle that is the fertility transition in England and Wales.

Introduction

The long cycle of fertility decline, rise and decline again, which unfolded in England and Wales across the three centuries leading up to 1850, was primarily driven by changes in the age at marriage and levels of celibacy. It is generally accepted, however, that the sustained decline from the mid nineteenth century was different because it was characterised by the novel introduction of fertility control within marriage.

Much of our understanding of these trends in fertility, and those in mortality (both shown in Figure 1) has been gleaned from ‘local’ and individual-level data. Yet, despite the great growth in the collection and publication of statistics in the Victorian era, research into the dramatic reduction in fertility over the course of the nineteenth century has been constrained in different ways by access to data, the content of the records collected, and the sheer volume of the material. In this paper we briefly review the sources and methods used to study the history of fertility in England and Wales. The review acknowledges the great contributions made by those undertaking local studies, but notes that ‘local’ studies have had less of a role to play in studies of fertility in the later nineteenth century. We then introduce the fertility measures which have been calculated for every registration sub-district in England and Wales from individual level data from the censuses from 1851 to 1911, made available by the Integrated Census Microdata project, and express our hope that these may open up a new era of ‘local’ population history which will eventually unlock the secrets of what drove the fertility decline.

Figure 1 The demographic transition in England and Wales: the paths of total fertility (TFR) and life expectancy at birth (e(0))



Note: The scale on the right hand axis runs from top to bottom, while that on the left hand axis runs from bottom to top. The solid lines are calculated using data from family reconstitution, while the dotted lines use data derived from civil registration and censuses.

Source: E.A. Wrigley, R.S. Davies, J.E. Oeppen and R.S. Schofield (1997) *English Population History from Family Reconstitution 1580–1837* (Cambridge, 1997); *The Registrar General's Statistical Review for 1938 and 1939* (London, HMSO, 1947), p. 297; ONS Vital Statistics: Population and Health Reference Tables (annual data) 2013; Human Mortality Database.

Past studies of fertility in local populations

Our knowledge of the early history of fertility in England and Wales has been gleaned very much from ‘local sources’, in particular from the contents of the parish registers, garnered by members of the Local Population Studies Society and passed for further analysis to members of the Cambridge Group for the History of Population and Social Structure (CAMPOP). These endeavours have been chronicled in academic papers published in the pages of this and other journals, and in the two immensely influential books: *The Population History of England 1541–1871*, and *English Population History from Family Reconstitution 1580–1837*.¹ Of necessity, work on parish registers had to be undertaken at the ‘local’ level: the transcription, linking and analysis of the records from just one parish requires a great deal of time, resources and dedication. Thus, although our understanding of the history of fertility in England and Wales reaches back over several centuries, our geographical view of the period before 1837 has been more constrained, being confined predominantly to England and to the 404 Anglican parishes

¹ E.A. Wrigley and R.S. Schofield, *The Population History of England 1541–1871: a Reconstruction* (London, 1981); E.A. Wrigley, R.S. Davies, J.E. Oeppen and R.S. Schofield, *English Population History from Family Reconstitution 1580–1837* (Cambridge, 1997).

in the Cambridge Group's 'aggregate' sample—just 4 per cent of the total of 10,000 or so parishes in the country. Analyses undertaken at the Cambridge Group using data from family reconstitutions were focussed on just 26 parishes for which reconstitutions were undertaken. Reconstitution data provide very detailed insight into fertility behaviour as they allow researchers to calculate the age at which men and women married and the rate at which they conceived and bore their children, along with the chances that they would experience the loss of one or more of their offspring and how this in turn might influence their overall fertility.

Unfortunately, the Anglican parish registers begin to lose their value as a source during the nineteenth century when secularisation and the proliferation of religious denominations reduced their coverage. An increasing delay between birth and baptism also meant that the ability of baptism and infant burial to represent births and infant deaths was reduced. It is therefore fortunate for historians that the civil registration system was established in 1837. The statistics on births, marriages and deaths published by the Registrar General, along with those contained in the Census Reports, have become the most reliable and widely used source of demographic information for the later nineteenth century. The Annual and Decadal Reports published by the Registrar General are now available and searchable online, thanks to the Online Historical Population Reports website, a very valuable resource usually referred to as Histpop.²

Nevertheless, it is frustrating that, despite the switch to civil registration, researchers have been unable to trace the details of the fertility transition and their understanding of the underlying processes remains hazy. The civil registers are not available in a form conducive to the use of family reconstitution methods and population historians have found it difficult to discover just how couples might have been changing their behaviour. The Registrar General's nineteenth and early twentieth century reports for England and Wales suffer from the major drawback that the birth certificates on which they were based did not contain any information on the age of the mother of the child at the latter's birth, nor did they record the parity of the birth. This has meant that the precise details of couples' fertility history, such as their ages at marriage, the numbers of their children and the spaces between them, or the mother's age at last birth cannot be determined from the published tables. This makes it difficult to discern whether couples were taking up 'stopping' behaviour, were delaying marriage and their first birth, or were managing to have longer periods between births during the fertility transition. Each of these pieces of information would have given an indication of how attitudes to family size were changing during the transition, and how these attitudes might have evolved and spread. Researchers have therefore had to develop methods of analysis using, first, the published reports from the decennial census returns and, second, the individual level census enumerators' books, in their attempts to understand the changing patterns of fertility behaviour.

The published accounts of registered births together with the decennial population counts available from the census reports allowed, among others, those involved in the

2 See www.histpop.org [accessed 27 June 2018].

Princeton European Fertility Project and then Robert Woods and his associates, to map relative fertility levels across the country using counties and registration districts (RDs) as their respective geographic units.³ This meant that the patterns uncovered were less ‘local’ in nature and, while they revealed considerable spatial and temporal differences within the overall fertility decline, the relatively large spatial units used; the 40 or so counties and the 600 plus RDs, were large and often heterogeneous, making it difficult to offer any explanation for the patterns observed. The effects on fertility of occupational specialisms; or concentrations of particular classes; or urban-rural differences in behaviour, were all difficult to untangle at these larger scales.

The 1911 census included a suite of special questions on ‘fertility within marriage’, to be answered by currently married women. The data collected through these questions were presented in two reports on this ‘Fertility Census’.⁴ The second of these reports formed the basis of Simon Szreter’s important book *Fertility, Class and Gender in Britain, 1860–1940*, which introduced the concept of ‘communication communities’ to the debate on how fertility control spread throughout a population.⁵ The two reports on the ‘Fertility Census’ focussed very much on occupational and class differences in fertility. Indeed the Registrar General—or at least his Superintendent of Statistics, T.H.C. Stevenson—devised a Social Class classification scheme specifically for his analysis.⁶ This analysis had fuelled the popular perception that the fertility decline was led by the middle classes although, among the working classes, textile workers had also had low fertility. Until recently it was commonly supposed that the decline was achieved through couples’ adoption of ‘stopping’ behaviour once they had achieved a desired number of children. The reasons why this new behaviour might have emerged have been hotly debated. Were couples adapting to the new economic or social circumstances they were encountering in the wake of the Industrial Revolution, or did the concept of limiting the size of one’s family spring up within certain social groups, or in certain places, and then diffuse through the population as this innovative behaviour, and the means to bring it about, became more acceptable?

Some researchers turned to the census enumerators’ books (CEBs) in an effort to glean more precise, age specific measures of fertility and monitor how they changed over time.⁷ In the 1980s Hinde and Garrett used the individual level data on age, marital status and relationship to head of household contained in the CEBs to calculate age specific fertility rates for married women under the age of 50, in the five years before particular censuses,

3 A.J. Coale and S.C. Watkins, *The Decline of Fertility in Europe* (Princeton, 1986); M.S. Teitelbaum, *The British Fertility Decline: Demographic Transition in the Crucible of the Industrial Revolution* (Princeton, 1984). R.I Woods, *The Demography of Victorian England and Wales* (Cambridge, 2000), especially the maps between pp. 96–7.

4 Census of England and Wales 1911, *Vol XIII: Fertility of Marriage, Part 1*. British Parliamentary Papers (hereafter BPP) 1917–18 XXXV.1 [C. 8678]; Census of England and Wales 1911, *Vol XIII: Fertility of Marriage, Part 2* (London, 1923).

5 S. Szreter *Fertility, Class and Gender in Britain, 1860–1940* (Cambridge, 1996).

6 See T.H.C. Stevenson, ‘The fertility of various social classes in England and Wales from the middle of the nineteenth century to 1911’, *Journal of the Royal Statistical Society*, 83 (1920), pp. 401–44.

7 See, for example: B. Eckstein and A.Hinde, ‘Measuring fertility within marriage between 1841 and 1891 using parish registers and the census enumerators’ books’, *Local Population Studies*, 64 (2000), pp. 38–53.

using the own children method originally devised by Grabill and Cho.⁸ More recent efforts in this direction have appeared in Garrett *et al.*'s book *Changing family size in England and Wales* and, as recently as 2017, in this journal.⁹ The amount of time required to undertake the transcription and preparation of the data needed for this type of analysis meant that once again, studies using the own children method have tended to be 'local' in scope; restricted geographically and to relatively small populations. It is unclear whether the communities analysed are representative of their neighbours, how they fit into their wider contexts, and how these 'local' stories might be brought together to create the national picture.

Current work on fertility at the local level

The release of data from the Integrated Census Microdata (I-CeM) project has provided researchers with access to the anonymised data of virtually every individual enumerated in the 1851, 1861, 1881, 1891, 1901 and 1911 censuses of England and Wales, a total of some 162 million person records.¹⁰ The original data in the CEBs have been enhanced by the addition of relational variables which allow families and households to be analysed, even though the data are held as a flat file.

While in theory this impressive dataset could allow researchers to measure fertility behaviour in each of the 10,000 parishes of England and Wales, in practice constraints still remain. Some parishes contained such small populations that robust fertility measures cannot be calculated. In addition, when using the own children method to calculate fertility rates one has to inflate the number of children to account for children who had died or were living away from their parents and so were not enumerated in the family home. While statistics allowing the calculation of infant and early childhood mortality were published annually and even—in the latter decades of the nineteenth century—quarterly by the Registrar General, the smallest geographic units for which they are available are registration sub-districts (RSDs).¹¹ England and Wales was made up of around 600 registration districts (RDs). These were divided into over 2,000 RSDs, the great majority of which contained sufficiently large numbers of people to provide robust overall rates of fertility and

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- 8 P.R.A. Hinde, 'The fertility transition in rural England [1851–81]' (unpublished Ph.D. Thesis, University of Sheffield, 1985); E.M. Garrett, 'The trials of labour, motherhood versus employment in a nineteenth-century textile centre', *Continuity and Change*, 5 (1990), pp. 121–54. The own children method is described in W.H. Grabill and L.-J. Cho, 'Methodology for the measurement of current fertility from population data on young children', *Demography*, 2 (1965), pp. 50–73.
 - 9 E. Garrett, A. Reid, K. Schürer and S. Szreter, *Changing Family Size in England and Wales: Place, Class and Demography* (Cambridge, 2001); H.M. Boot, 'Using Census Returns and the own-children method to measure marital fertility in Rawtenstall, 1851–1901', *Local Population Studies*, 98 (2017), pp. 54–73.
 - 10 For the I-CeM project, see <https://www1.essex.ac.uk/history/research/icem/default.htm> [accessed 27 June 2018]; K. Schürer, and E. Higgs, E. *Integrated Census Microdata (I-CeM), 1851–1911*. [data collection] Colchester, Essex: UK Data Archive [distributor], 2014. SN 7481. <http://dx.doi.org/10.5255/UKDA-SN-7481-1>.
 - 11 Data on births and deaths by age at the Registration Sub-District level are only available from the Registrar General's *Quarterly Returns*. Annual and decadal figures have to be calculated by aggregating the quarterly figures. The *Quarterly Return* was published from 1849 until 1975 when it was replaced by *Population Trends*, also published quarterly. The *Quarterly Returns* did not begin to publish RSD level infant mortality rates until 1868 or 1869 however. See M. Nissel, *People Count: a History of the General Register Office* (London, 1987).

mortality, although some caution has to be exercised when considering sub-groups within them. RSDs nest within RDs and, being smaller, they tend to be rather more homogenous units than the latter; so ‘rural’ RSDs can be differentiated from ‘urban’ ones by means of their population densities, and ‘more affluent’ ones can be distinguished from those that are ‘less well off’ by the social classes of their constituent households. RSDs where men, or women, are concentrated in particular occupations can also be picked out. Even so, RSDs should not be thought of as entirely homogenous. Some, such as those lying on the outskirts of towns, may still include an urban sector and a rural sector, for instance.

It is thus now possible, using RSD-level analysis, to examine the fertility behaviours of couples in different types of place, or in different social groups across time to consider whether it was ‘who they were’ or ‘where they stayed’ which influenced their fertility behaviour. We can begin to explore whether there were particular spatial or social communities which ‘led’ the fertility decline and, if so, how the new ideas or behaviours spread to other sections of the population. This work has formed the basis of a recent project based at the Universities of Cambridge and Essex entitled *An Atlas of Fertility Decline in England and Wales*.¹² The *Atlas* project allows places which have been studied previously, but in ignorance of their wider context, to be situated within that context. It also makes possible the investigation of the economic, social and demographic conditions in places such as large cities, which could not previously be explored.

An online version of the *Atlas*, called *PopulationsPast*, has been created in order to allow local, economic, social, medical and demographic historians—as well as historical or population geographers—to identify the RSDs, RDs, counties or regions, or indeed the particular census years, which might be best suited to their research purposes.¹³ Researchers wondering where fertility, or infant mortality, was particularly high or particularly low; those seeking to find where the higher social classes or those following a particular occupation were concentrated; or those trying to discern whether an RSD was typical, or atypical, of the county in which it sat will find answers to such questions, and many more besides, by consulting *PopulationsPast*.

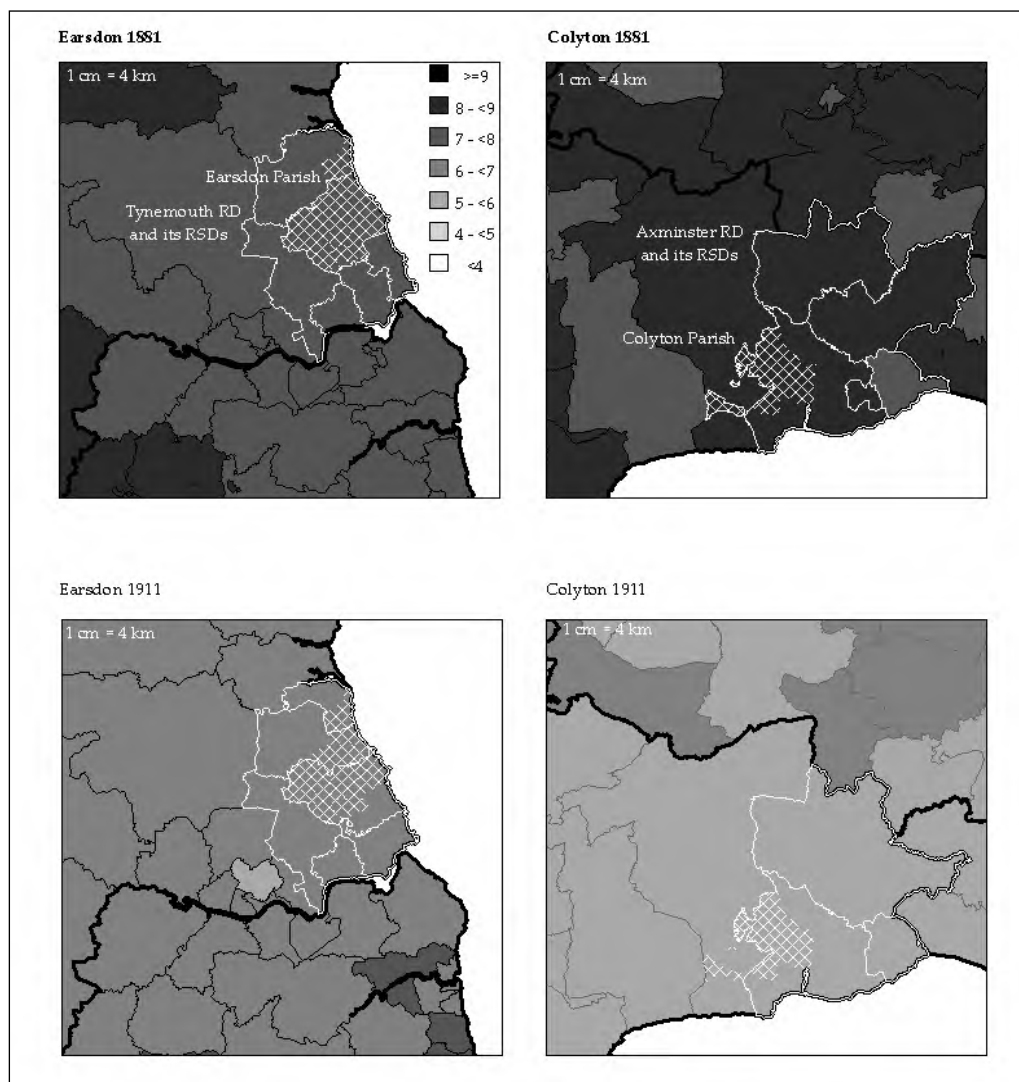
For example consider the 1881 and 1911 total marital fertility rates for the RSDs in which the 1851 parishes of Earsdon, Colyton and Banbury, three of the original 26 parishes used for CAMPOP’s family reconstitution study, sat (Figure 2). The total marital fertility rate as computed here is a summary measure of childbearing within marriage between the ages of 20 and 49 years, and hence we abbreviate it as $TMFR_{20-49}$.¹⁴ The extent of each

12 See <https://www.campop.geog.cam.ac.uk/research/projects/victorianfertilitydecline> [accessed 27 June 2018].

13 The online version of the atlas is available at www.populationspast.org [accessed 27 June 2018]. A brief introduction to the *PopulationsPast* website may be found elsewhere in this volume of *Local Population Studies*.

14 In the context of the *Atlas* project, the total marital fertility rate for a given census year is the completed family size that would be achieved by a hypothetical woman who married at a given age (20 years) and then experienced the age-specific marital fertility rates at each age estimated by applying the own children method to data from that census. It is a single-figure estimate of fertility within marriage during the five years preceding that census.

Figure 2 The 1851 parishes of Earsdon, Northumberland; Colyton, Devon; Banbury, Oxfordshire; and Bolton-le-Moors, Lancashire, situated in their 1881 (upper panels) and 1911 (lower panels)

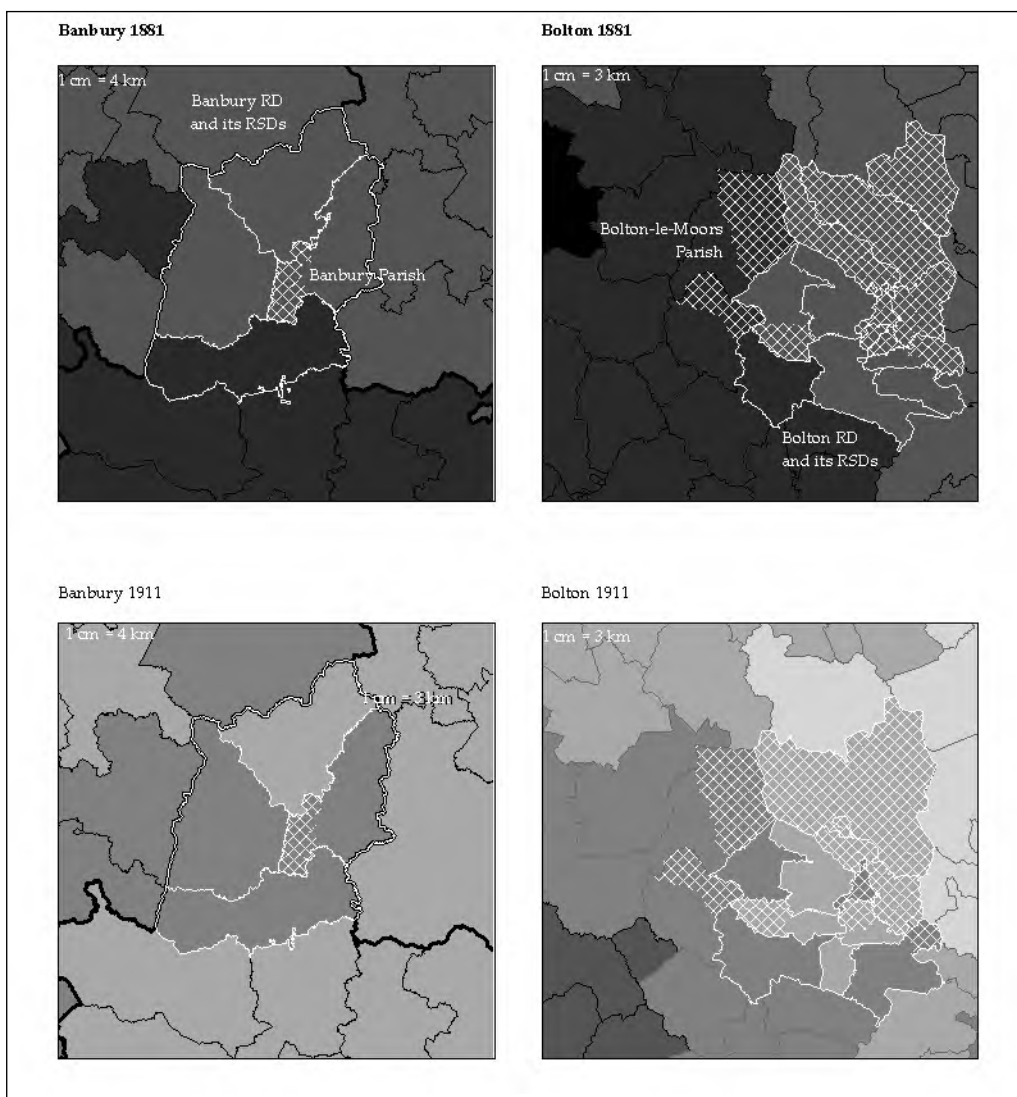


Note: The total marital fertility rate mapped here for a given place and census year is the completed family size that would be achieved by a hypothetical woman who married at age 20 years and then experienced at each age the age-specific marital fertility rates estimated by applying the own children method to data from that census. It is an estimate of fertility within marriage in that place during the five years preceding that census.

Sources: The data displayed here have been produced by the *Atlas of Fertility Decline* project (Principal Investigator, Alice Reid) with funding from the Economic and Social Research Council (ES/L015463/1), using an enhanced version of data from K. Schürer, E. Higgs, A.M. Reid and E.M. Garrett (2016), *Integrated Census Microdata (I-CeM.2), 1851–1911*. [data collection] Colchester, Essex: UK Data Archive [distributor], 2014. SN 7481. <http://dx.doi.org/10.5255/UKDA-SN-7481-1>. Boundary data have been created for the project by Joe Day: see J.D. Day, *Registration Sub-District Boundaries for England and Wales 1851–1911* (2016). This

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panels) registration districts and registration sub-districts: showing the total marital fertility rate (TMFR₂₀₋₄₉) at those dates



dataset was also created by the *Atlas of Fertility Decline* project with funding from the Economic and Social Research Council (ES/L015463/1) using A.E.M. Satchell, P.M.K. Kitson, G.H. Newton, L. Shaw-Taylor and E.A. Wrigley, *1851 England and Wales Census Parishes, Townships and Places* (2016) available at <https://www.campop.geog.cam.ac.uk/research/occupations/datasets/catalogues/documentation/> [last accessed 27 June 2018].

Satchell *et al.*'s dataset is, in turn, an enhanced version of N. Burton, J. Westwood and P. Carter, *GIS of the Ancient Parishes of England and Wales, 1500–1850*. Colchester, Essex: UK Data Archive [distributor], 2004, SN 4828. Finally, this is a Geographical Information Systems version of R.J.P. Kain and R.R. Oliver, *Historic Parishes of England and Wales: an Electronic Map of Boundaries before 1850 with a Gazetteer and Metadata*. Colchester, Essex: UK Data Archive [distributor], 2001. SN 4348.

parish in 1851 is shown hatched in white, and the Registration District (RD) of which the RSD is a part, and the other RSDs within that RD are outlined in white. The earliest maps shown are for 1881 because marital fertility did not change much between 1851 and 1881. In the parish register era the total marital fertility rates in all three parishes lay between seven and eight children per woman.¹⁵ In Earsdon RSD, in Tynemouth RD, in Northumberland, the TMFR₂₀₋₄₉ in 1881 was 7.69 children. By 1911 population growth meant that the 1851 parish was straddled by two RSDs; Cramlington and Whitley; both of which had TMFR₂₀₋₄₉s of just over six children per married woman. The Earsdon maps show that the wider region in which Earsdon lay had had very similar experiences of fertility decline.

In the rural RSD of Colyton, in the RD of Axminster in Devon, the TMFR₂₀₋₄₉ was about 8.3 children in 1881; but by 1911 this had fallen by over 2.5 children to 5.69; a somewhat more dramatic fall than that seen in Earsdon (Figure 2). Again, Colyton RSD was typical of its neighbours, which had all seen falls in fertility of a similar magnitude. The 1851 parish of Banbury, a small market town, sat at the heart of Banbury RD, in the RSD of the same name, in Oxfordshire. In 1881 the TMFR₂₀₋₄₉ was 7.55 children, so somewhat lower than those of either Earsdon or Colyton. The maps show that in 1881 Banbury was right on the border between a group of RSDs to the south (which were in fact centred around Oxford) with TMFR₂₀₋₄₉s over 8), and another group to the north where fertility was rather lower. The TMFR₂₀₋₄₉s in the southern group of RSDs fell quickly after 1881, to fewer than six children per woman by 1911, whereas in Banbury RSD and some of its neighbours, the decline was rather more subdued, starting from a lower point and finishing just above six children per woman (in Banbury RSD itself the 1911 figure was 6.03 children).

The fourth pair of maps in Figure 2 shows the 1851 parish of Bolton-le-Moors in Lancashire. This large, industrial parish was not among the 26 reconstituted parishes, but did feature as one of the 13 communities studied by Garrett *et al.*, as did Colyton, Banbury and Earsdon.¹⁶ By the mid nineteenth century, Bolton was a large centre of the cotton textile industry and in 1881 Bolton RD comprised 13 RSDs, although the same area had been reconfigured into 'just' 8 RSDs by 1911. Like Banbury, Bolton RD appears to have sat on a boundary in 1881, with the great majority of its RSDs experiencing TMFR₂₀₋₄₉s of around 7.6-7.9 children. Just one RSD in the RD (West Houghton) had a TMFR₂₀₋₄₉ over 8.0. This RSD was sandwiched between the textile area in which Bolton sat and the mining area to the west which lay around the towns of Wigan and Leigh. West Houghton's TMFR₂₀₋₄₉ was much more akin to those in these mining towns, which all lay well above eight children. By 1911, although fertility had fallen in all areas of the Bolton map, a gradient had developed from the south-western mining areas around Wigan, which still retained TMFR₂₀₋₄₉s of over seven children, moving north east through West Houghton

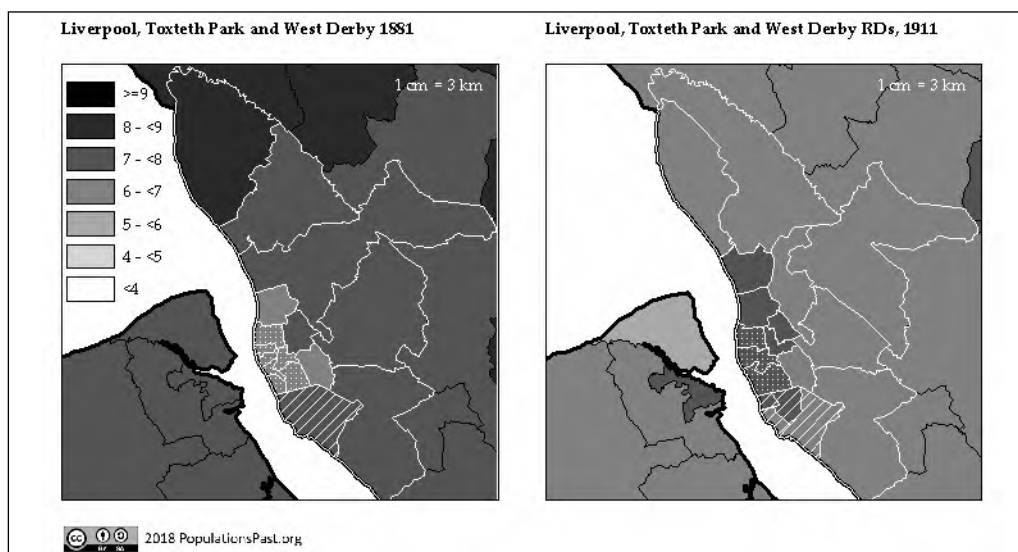
15 Wrigley *et al.*, *English Population History*, Table 7.42, pp. 503–7.

16 Garrett *et al.*, *Changing Family Size*.

($TMFR_{20-49}$ 6.24), on to Bolton RD, where the majority of RSDs had $TMFR_{20-49}$ s of between 5.0 and 6.0; to finally reach the town of Bury and its environs where $TMFR_{20-49}$ s were under 5.0. Comparing the 1911 Bolton map to that of 1881 further suggests that different RSDs within the RD saw their fertility decline at different rates, opening up questions as to how they differed in other respects, and had experienced change over time. The example of Bolton shows how certain areas may offer researchers a considerable variety of demographic experiences within a relatively small spatial area, allowing them to test their social, economic and demographic theories of fertility decline. Indeed, the Bolton map illustrates that while there were many more parishes than RSDs in England and Wales there were certain, mainly recently urbanised, communities where the local parish was much larger and more diverse than the RSDs covering the same area. In such cases the RSDs provide a more detailed picture of the variety of conditions within the parish.

The fact that many large towns, such as Bolton, were composed of numerous RSDs also permits insight into how the nature of such urban areas may have changed over time. Take what is today the Merseyside conurbation of Liverpool, Toxteth Park and West Derby, for example (Figure 3). These three RDs did not change in shape or extent between 1881 and 1911, although the configuration of their constituent RSDs did alter. Liverpool and Toxteth Park RDs were completely surrounded on their landward sides by the RSDs making up the RD of West Derby. In 1881 the central RSDs of Liverpool and two neighbouring RSDs in West Derby had $TMFR_{20-49}$ s of under 7.0. In the most central districts of Dale Street, St Martin and St Thomas couples were, on average, having fewer than 6.5 children. Toxteth Park RD, comprising just one RSD in 1881, had been carved out of West Derby after the previous census and its marital fertility, like that of the majority of RSDs in the latter RD lay above seven children per married woman. By 1911 the situation had, rather unexpectedly, almost completely reversed. At this date the Liverpool RSDs (reduced in number from seven to three) and their immediate neighbours displayed $TMFR_{20-49}$ s of over seven, whereas the surrounding RSDs had seen their fertility decline to lie between six and seven children per woman. To observe fertility apparently rising in a major urban area during a period in which the national picture was one of marked fertility decline was unexpected, and is most likely to be explained by major changes in the composition of the populations residing in the RSDs in question. Between 1881 and 1911 population density fell dramatically in Liverpool RD from 136 to 83 persons per acre. In both Toxteth Park and West Derby population density rose over the same period: from 53 to 62 persons per acre in the former and from 10 to 17 persons per acre in the latter. The outflow of people from the centre of the conurbation to the surrounding districts may have left behind sections of the population who were less disposed, or less able, to curtail their fertility. Certainly those RSDs in the conurbation with the highest marital fertility in 1911 also had relatively high proportions of people who were Irish-born and the highest proportion of men working in occupations in the Registrar General's social class V (unskilled manual work). However, it is likely that the story is rather more complex than this, given that the same could also be said of 1881.

Figure 3 Children born per married woman who married at age 20 years in the registration sub-districts of the registration districts of Liverpool, Toxteth Park and West Derby, 1881 and 1911

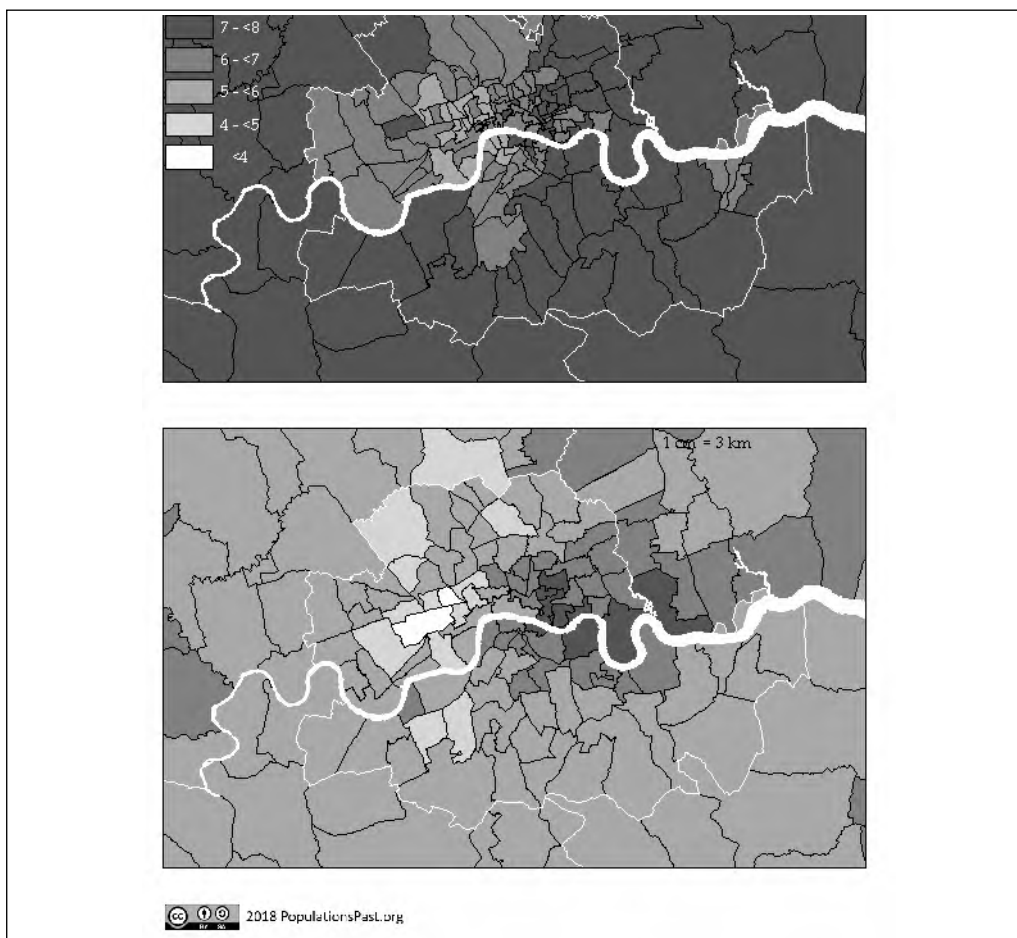


Note: The registration sub-districts (RSDs) making up the three registration districts (RDs) are outlined in white. The RSDs making up Liverpool RD are stippled; those in Toxteth Park hatched and those in West Derby left hollow.

Sources: See Figure 2.

Similar interesting contrasts in fertility behaviour, often going against our expectations, can be seen in other major urban centres such as Manchester. Perhaps the most striking intra-city differences can be seen in London, although this may, of course, be due to its size and the diversity of its population. Figure 4 maps the $TMFR_{20-49}$ s for the RSDs making up the registration county of London in 1881 and 1911. The map on the left suggests that in 1881 there was a gradient in fertility in the capital, with some RSDs in the West End having $TMFR_{20-49}$ s below six children, a very low figure at this date. These RSDs were surrounded by a wider ‘ring’ of RSDs to the north and west of the City of London with $TMFR_{20-49}$ s of between six and seven children. This ‘core area’ of lower fertility sat within an outer region, including the east and south of central London and extending into the surrounding counties, where $TMFR_{20-49}$ s lay above seven children. By 1911, this wider picture had altered to make the east-west split within London much more obvious. Fertility had fallen in almost all the RSDs visible on the map both inside and outside the County of London; indeed a few in the city’s West End had $TMFR_{20-49}$ s below five children, but the fall had been rather less dramatic in the East End. Indeed, as in Liverpool, some East End RSDs, such as Poplar, Spitalfields and Bethnal Green had seen no decline, or even a small increase in fertility; their $TMFR_{20-49}$ s remained above seven. It may be relevant that by 1911 over 40 per cent of women aged 15-49 living in Spitalfields RSD, and about 14 percent of such women in South West Bethnal Green RSD, had been born in Poland or Russia, but higher

Figure 4 Children born per married woman who married at age 20 years in the registration sub-districts within the registration county of London, 1881 (top) and 1911 (bottom).



Source: See Figure 2.

fertility among recent immigrants from Eastern Europe cannot explain the lack of fertility decline in either North East Bethnal Green RSD or in Poplar RSD, where very few such migrants were recorded. It is more likely that it was the poverty which was so prevalent in London's East End that helped to keep fertility high in all these RSDs, but further research is needed to confirm this.

The future

The I-CeM data, in tandem with the maps of marital fertility which can be derived from them, suggest that a new era in local population studies may be emerging. While there will always be a place for 'local' studies based on entities such as parishes, both for interest in the locality itself, or for illuminating particular research questions, researchers now have the

tools available which will allow them to investigate the ‘local’ at a quite different scale. A plethora of socio-economic and demographic variables can now be measured for cities, counties, and even whole countries, and comparisons made over both space and time.

It is also possible to redefine the borders of a ‘local’ area, or to combine areas together to ensure comparability over time, as was suggested by the maps of Liverpool. We can pick out areas which are ‘alike’ in some respect, but not necessarily near one another, so that research questions may be addressed by grouping together places which are socially or economically like one another, rather than places which lie near one another geographically. Such types of place may be compared over time, to see how they change, but we can also begin to investigate how changes in one type of place affected changes in other types of place, and how together they may have brought about changes in the national picture.

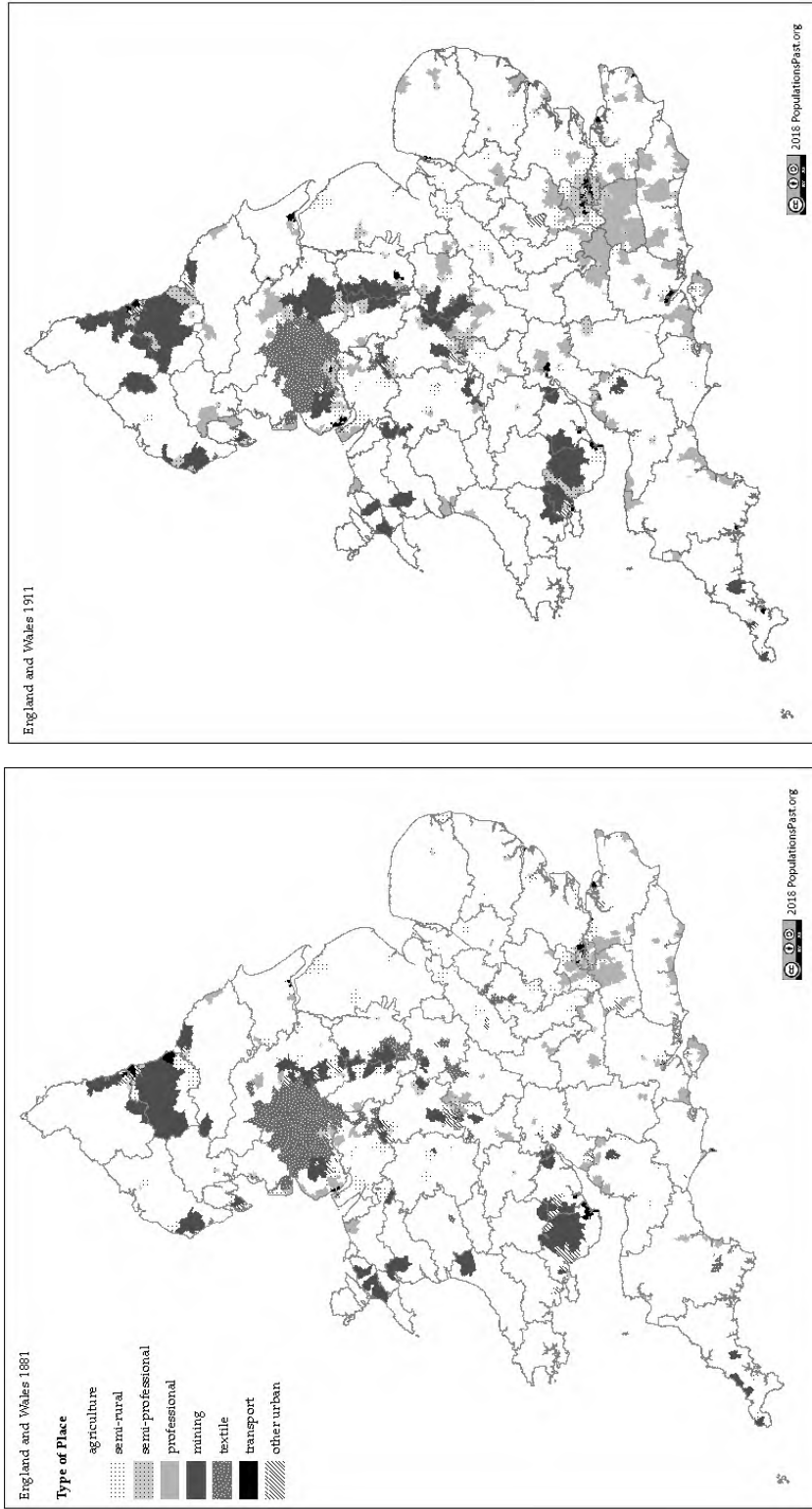
For the purposes of the *Atlas of Fertility Decline* project, for example, we have classified the RSDs of England and Wales into eight types: ‘professional’, ‘semi-professional’, ‘semi-rural’, ‘agricultural’, ‘mining’, ‘textile’, ‘transport’, and ‘other urban’.¹⁷ Colyton and Banbury RSDs were both classified as ‘agricultural’ in 1881 and 1911, for example; the RSDs containing Earsdon were all ‘mining’; and Bolton was a ‘textile’ town. While certain occupations or groups of occupations typify the different types of place, it should be noted that, even when a place was dominated by one occupational sector, a great variety of other people lived there. In communities where the great majority of people in the working age range were employed in mining or textile work, there were still likely to have been doctors, teachers, shopkeepers, publicans, carters, builders, laundresses and general labourers, amongst many others, plying their trades.

Figure 5 shows how these types of place were distributed across England and Wales in 1881 and 1911. The spread of the mining areas in the North East, South Wales and down the Yorkshire/Nottinghamshire/Derbyshire/Leicestershire spine of England is easy to see, as is the spread of professional areas in the South East, around London. What is perhaps not so evident is the large growth in the proportion of the population living in ‘semi-professional’ areas between 1881 and 1911. Look carefully and it is possible to see pockets of such areas emerging not only around London, but also adjacent to other large cities such as Birmingham, Manchester and Newcastle-upon-Tyne. At least 7.5 per cent of the working population in ‘semi-professional’ areas worked in the professions, but the proportion of workers made up of domestic servants was below the 30 per cent which characterised the ‘professional’ areas. The spread of ‘semi-professional’ areas may be thought of as a form of suburbanisation, a particular type of urban sprawl. While in terms of acreage these areas do not appear to stand out, the proportion of the population living in them grew dramatically between 1881 and 1911.

To illustrate this, the left-hand axis and the grey lines in Figure 6 show the number of married co-resident couples in which the wife was aged 20-49 years, living in the eight types

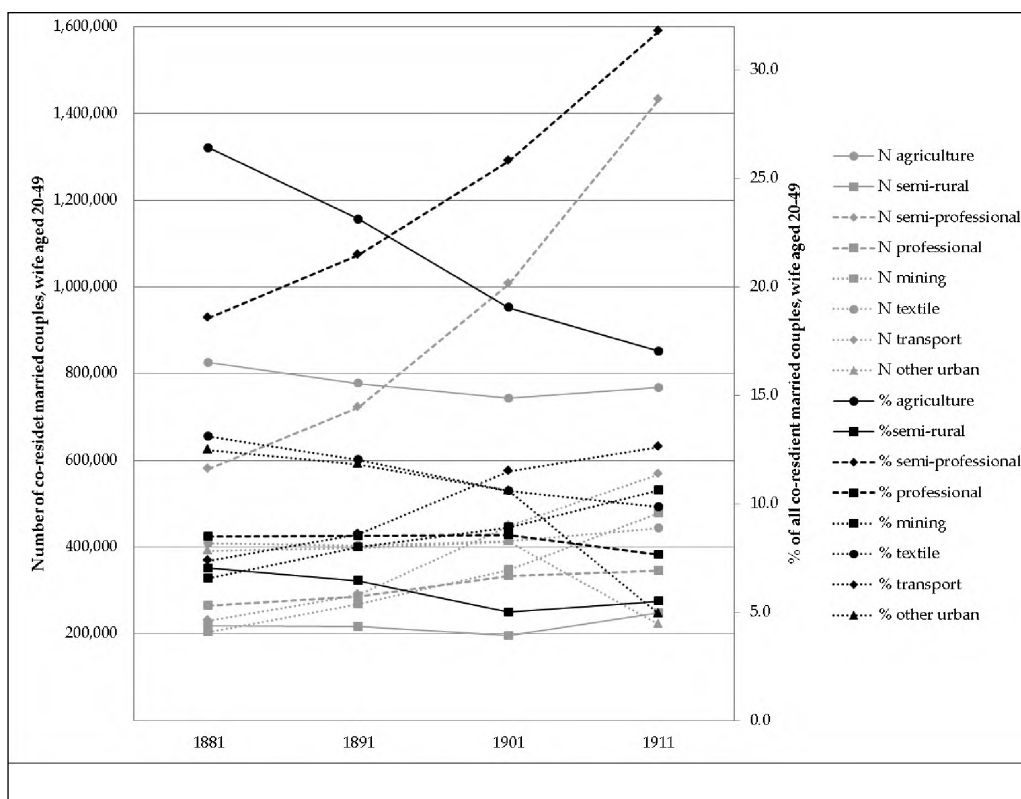
17 The precise definition of these types of place may be found under ‘Place Characteristics’ at: <https://www.populationspast.org/about/> [accessed 27 June 2018].

Figure 5 Types of place: the registration sub-districts of England and Wales, 1881 and 1911



Sources: See Figure 2.

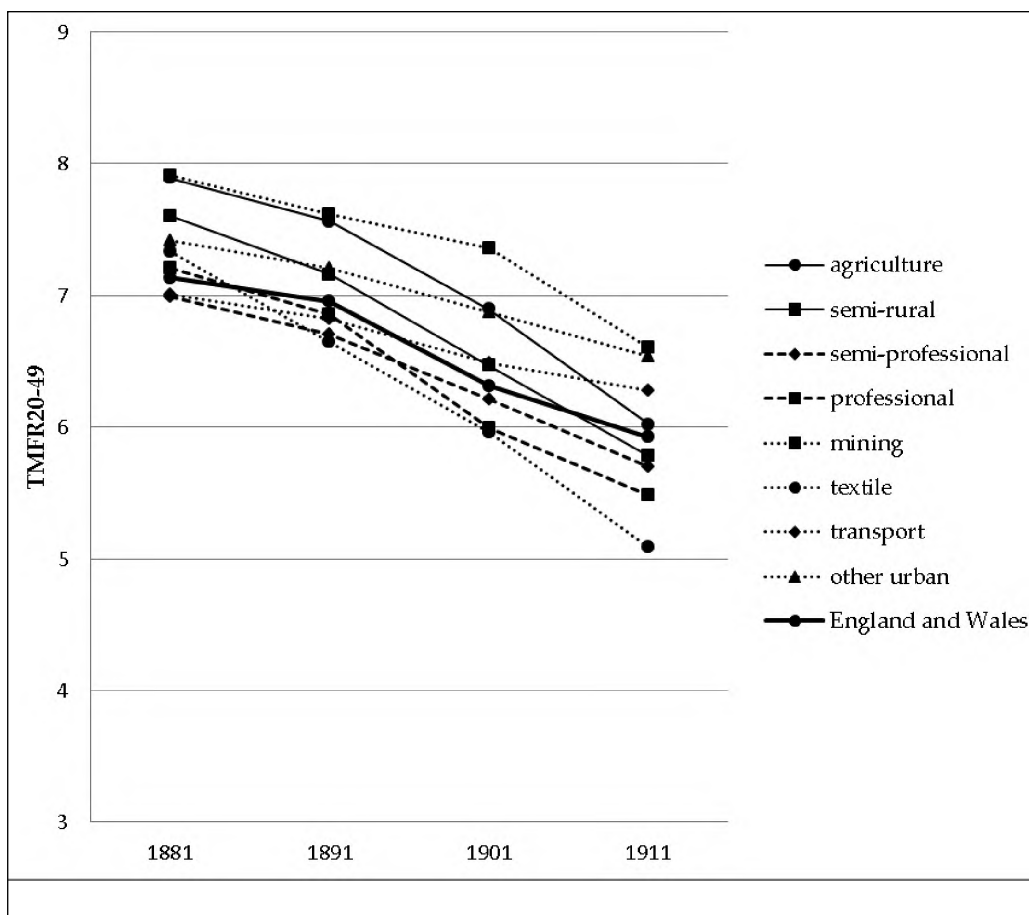
Figure 6 Number of co-resident married couples where the wife was aged 20–49 years, and the percentage of all married co-resident married couples, by type of place, England and Wales, 1881–1911



of place in 1881, 1891, 1901 and 1911. The right-hand axis and the black lines indicate the proportion of such couples present in each type of place. In 1881 the greatest number of couples lived in ‘agricultural’ areas; just over 1.3 million; some 24.6 per cent of the total. Perhaps surprisingly the *number* of couples in ‘agricultural’ areas did not dip markedly over the next three decades (indeed it revived a little between 1901 and 1911), but—as the population of the more urban areas grew disproportionately—the *share* of couples who lived in ‘agricultural’ areas fell to just 17 per cent of the total by 1911.

In 1881, by way of contrast, the ‘semi-professional’ areas held just under 600,000 co-resident couples where the wife was aged 20–49 years, around 18.5 per cent of such couples. Three decades later these areas had both extended and seen their population density increase until they held more than 1.4 million couples; some 31.8 per cent of the total. Further research is required to discover whether these largely suburban areas disproportionately attracted married couples and their families, but when considering overall marital fertility transition it is worth considering just how the composition, or character, of the population of married couples in particular areas or occupations or social groups was changing. Social, economic, infrastructural and cultural change may all have had an impact on who lived in an

Figure 7 Total marital fertility rate by type of place, England and Wales, 1881–1911



area, the sort of lives they lived and how they interacted with their neighbours, which could in turn have affected their fertility behaviour and encouraged or discouraged fertility decline within marriage. The new research tools at our disposal allow us to dig deeper into the national picture, but make it imperative that the research community continues to work diligently to accumulate a greater understanding of the local similarities and differences we can see between local scenes.

Figure 7 depicts the fall of marital fertility in each of the eight types of place described above. Even at their highest point in 1881, a range of $TMFR_{20-49}$ s are evident across the eight types. Thereafter the trend is downward in all types of place, but the figures fall more rapidly in certain categories, so that while fertility was lower in all types of place in 1911, the range of values was wider. Couples living in ‘mining’ areas reduced their $TMFR_{20-49}$ by around 1.5 children over the three decades; those living in ‘textile’ areas achieved a reduction of nearer 2.25 children. While those in ‘agricultural’ areas, ‘textile’ areas and ‘mining’ areas maintained the rate of their fertility decline through 1901 and 1911, couples in the other areas, including ‘professional’ and semi-professional areas saw a marked slow-

down in the rate of their fertility decline. ‘Transport’ areas even saw a slight increase in $TMFR_{20-49}$ over this decade. Were these slow-downs a real demographic shift or were they the result of compositional factors brought about by changing life-choices or new migration flows? Without local studies questions such as these will be very difficult to answer. However, the new resources that are being opened up for researchers interested in such issues in their local community, in their county, in their region or in the nation as a whole, make the pursuit and attainment of answers possible. New light can be thrown on local scenes that will each add a piece of the jigsaw which, when completed, will bring a whole new level of understanding of the complex puzzle that is the fertility transition in England and Wales, and beyond. The future looks exciting for Local Population Studies!

Acknowledgements

We should like to acknowledge the contributions to this paper of Hanna Jaadla, Joe Day and Max Satchell of the University of Cambridge, Eddy Higgs of the University of Essex and Kevin Schürer of the University of Leicester.