

## HISTORICAL DEMOGRAPHY

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### Summary

Historical demography is an important component of demography. Its aim is to obtain detailed information about population changes and people's demographic behavior in the past through applying demographic methods to historical data. Since its establishment as an academic discipline in the mid-twentieth century, historical demography has advanced at a rapid pace and made significant contribution to the development of demographic theories and to our understanding of population changes in both historical and contemporary societies.

This chapter starts with the definition of historical demography, its relationship with demography and demographic history, and main reasons why historical demography established itself so rapidly in the 1950s. It then summarizes major developments in historical demography since the 1950s. Following that the primary data sources available to historical demographers and some methodological developments made in historical demography are discussed. The chapter concludes with comments on the likely future challenges and opportunities for advancing historical demography in the world.

## 1. Historical Demography

Historical demography is commonly defined as the application of conventional and non-conventional demographic techniques to data sets from the past (Pressat and Wilson 1985; Smith 2003). Its primary aim is to obtain detailed demographic information and measure demographic changes such as changes in population size, age structure, sex ratio, fertility, mortality, and migration for populations in the past. While estimating the total population in a particular historical setting can be regarded as historical demography at its crudest level, the application of demographic methods to historical source materials and the information generated by such application can be far more elaborate.

Historical demography is closely related to, but differs from, demographic or population history. The former concentrates largely on obtaining the detailed and accurate demographic information for historical populations that provides the foundation for the study of demographic or population history. The latter includes historical demography as a field of enquiry, but covers wider research areas. Demographic history investigates not only the process of past population changes, but also the interrelationship between these changes and a wide range of socio-economic, political, cultural and environmental factors. In general, historical demography tends to be more involved in tackling the technical problems of measuring past demographic changes and developing effective methods of analyzing historical population data, whereas demographic history is more concerned with the reasons, processes and consequences of major demographic events, especially their long-term impact on socio-economic changes and historical development.

Population changes interact closely with, and play a major part in, political, social and economic changes. Through offering detailed and reliable demographic information about past societies, historical demography can greatly improve our knowledge of history, population history in particular. One of such examples is E. A. Wrigley and R. S. Schofield's monumental work *The Population History of England 1541-1871* (1981). This study, based on extensive empirical evidence and demographic estimates, systematically examines population trends in England over a period of more than three hundred years and the population theory proposed by Thomas Robert Malthus (1766-1834). The comprehensive analysis presented in this book provides great insights into demographic patterns and their interplay with socio-economic conditions in the time before and during the industrial revolution. The impact of this work has been felt far beyond the disciplinary confines of historical demography or population history.

While a distinction between historical demography and demographic history can be and has been made by some scholars, it is difficult in practice to draw a clear line between the two approaches and their practitioners. Demographic historians often need to have detailed and accurate demographic information as the foundation for their investigation into population history. Equally, historical demographers also want to examine socio-economic reasons for population changes and the impact of such changes on the society. Because of the close connection between the two disciplines, the discussion presented in this chapter will not be confined within the area narrowly defined by historical demography.

Historical demography is a major component of demography that studies population changes, but it is primarily concerned with applying demographic methods to population data from the past. Demographers wishing to test a proposed hypothesis on contemporary population can, at least theoretically, always collect the data they need according to their research design. Historical demographers, however, have to use existing data – they cannot go back in time to collect the required data. The available data may not have been collected for the purpose of demographic research; they may suffer from various types of registration problems or biases that are often related to the rules or procedures applied in creating the data. This makes historical demographic research a more challenging task than the study of contemporary population issues. For this reason, historical demographers often need to develop new techniques or modify conventional demographic methods so that they can be effectively used in analyzing surviving historical data – a point that will be further discussed in Section 4 of this chapter.

Historical demography has made a significant contribution to the development of demography. Through enriching the knowledge about demographic behavior and population changes in the past, historical demography helps us to gain a better understanding of demographic trends in contemporary societies and future. Louis Henry (1911-1991), the founding father of historical demography, once suggested that, to answer the two questions about population changes that intrigued demographers in the mid-twentieth century, “Where are we?” and “Where are we headed?” we should begin by answering a third, “Where were we yesterday and the day before?”. This reference to the past is, he said, essential for it alone can tell us about the day after (Rosental 2003: 98). The importance of historical demography to the development of demography does not stop here, however. After the Second World War, there was a considerable increase in the interest in population issues throughout the world, and demography as an academic discipline entered a period of rapid development. Mortality and fertility, which had decreased notably in the nineteenth century and the first half of the twentieth century, fell to low levels in most developed countries. These countries had well-established vital registration systems and conducted regular censuses and population surveys. Population data obtained through these modern-day efforts were, however, simply insufficient for uncovering the process of demographic transition and people’s demographic behavior in the pre-transition society – both of which were of overriding importance to the development of demographic theories and the understanding of population changes of the time. Even in countries where detailed mortality and fertility data had been collected during the process of their demographic transition, those available to researchers were usually limited to published census or survey results.

Public release of original census or vital registration records was often prohibited for long periods after the records were taken, whilst some countries destroyed the records altogether because of privacy concerns. Such practices gave historical demography a unique opportunity to fill important gaps in demographic research. As we shall see, the investigation of population changes in the past has contributed to the development of many important and widely used population theories, analytical models and demographic techniques.

## **2. The Development of Historical Demography**

Although it is widely accepted that historical demography was established by the French demographer L. Henry in the 1950s, interest in population history had existed long before the twentieth century, and many researchers engaged in the study of past population changes and made great contributions to the development of historical demography. As early as the seventeenth century, John Graunt (1620-1674) already critically examined available demographic data. His insightful analysis led to the publication of a landmark study, *Natural and Political Observations Made upon the Bills of Mortality* in 1662, which in many ways laid the foundation for the development of demography. Thomas Robert Malthus also systematically examined demographic data available to him, and published, between 1798 and 1826, six editions of his famous treatise, *An Essay in the Principle of Population*. Malthus's population theory, though very controversial, has profoundly influenced the intellectual thinking, especially the development of population thoughts, in the world over the following two hundred years. Many other pioneers, such as William Petty (1623-1687), Gregory King (1648-1712), Johann Süssmilch (1707-1767); Adolphe Quételet (1796-1874), and William Far (1807-1883) were also involved in the study of population and in collecting and analyzing demographic data between the seventeenth and nineteenth centuries. Their works made direct contribution to historical demography and population studies, and further enriched demographic theories developed up to their time.

By the early twentieth century, interest in historical demography had grown significantly enough for a Commission for Historical Demography to be formed in 1928 under the auspices of the International Congress of Historical Sciences. The number of scholars working on historical demography and related issues continued to increase. Some researchers also started to explore the potential of using surviving parish records of births, marriages, and burials in the study of population history. In the 1940s, for example, Hannes Hyrenius, a Swedish demographer, analyzed parish registers and applied methods similar to those used by Henry a decade later. The impact of Hyrenius' work was rather limited, however, partly because it was published in Swedish, and appeared during the Second World War (Rosental 2003). A great change took place after the war. Historical demography established itself as an academic discipline in the 1950s and soon entered a period of rapid development (Wrigley, 1981; Saito 1996).

### **2.1. The Early Development of Historical Demography in France**

Differing greatly from that predicted on the basis of the pre-war downward fertility trend, a baby boom took place in many countries after the Second World War. This unexpected change puzzled many demographers and the uncertainty surrounding the

upsurge in fertility also shook their confidence in correctly forecasting future population trends. There was a further matter that had long concerned demographers and politicians in France. In comparison with other European countries, fertility decline started much earlier in France and its fertility had remained low for many decades. To explain such fertility differentials and their recent changes, and to improve the ability of providing reliable population forecast, there was an urgent need to get a better understanding of people's reproductive behavior and related issues.

L. Henry, working at the Institut National d'Études Démographiques (INED), was one of the researchers who were actively involved in pursuing these studies at the time. Henry believed that, to identify the underlying causes of changes in reproductive behavior and fertility, demographers needed not only to obtain detailed information about marriage patterns and marital fertility, but also to distinguish and measure controlled and uncontrolled fertility. He defined an important theoretical concept: natural fertility. According to him, deliberate birth control 'can be said to exist when the behavior of the couple is bound to the number of children already born and is modified when this number reaches the maximum which the couple does not want to exceed.' Natural fertility is deemed to exist in the absence of such deliberate birth control (Henry 1961: 81). Although the concept of natural fertility has certain limitations, (for example, it does not consider the issue of non-parity related fertility control) it has been widely accepted in the study of fertility and its transition. With these distinctions, demographers would be able to explain whether variations in overall fertility were due to changes in marriage behavior, to what extent the observed fertility reduction was the result of falling marital fertility, and how far the recorded fertility departed from the uncontrolled or natural fertility. In order to measure changes in fertility, Henry also, in parallel with Norman Ryder, developed the concept of Parity Progression Ratio, an important fertility indicator in demography, and the method of computing it (Henry 1953).

Like the efforts made by other demographers at the time, Henry's initial investigation was constrained considerably by the lack of data. As pointed out in the last section, fertility had been falling for several decades if not more than a century in some developed countries. Their recent demographic data simply did not allow demographers to answer questions about uncontrolled fertility (if it had existed) and its early reduction. To place his theory of natural fertility on solid empirical evidence, and to provide detailed description and explanation of fertility decline, Henry turned to historical population data. He first examined genealogical records made of Geneva's ruling class families from the mid-sixteenth century. The analysis of these records provided considerable insight into the demographic behavior of this urban elite and showed that their mortality and fertility already started declining in the late seventeenth and early eighteenth century (Henry 1956). This population belonged to a special social group, however, and the demographic patterns recorded among them were expected to be different from those observed in the general population.

To overcome this problem, Henry and his colleagues turned to the surviving parish records of baptism, burial and marriage of the village of Crulai, in Normandy, France. These parish records run in an unbroken series from the mid-seventeenth century to the French Revolution, and provided detailed demographic information. These details

ensured that most of the records could be correctly linked to one another, making them an invaluable data source for the study of demographic patterns in the past and their historical changes. In spite of their potential value for demographic research, the parish records were not originally created for demographic investigation, and they could not be analyzed easily using conventional demographic methods. This provided Henry with a major methodological challenge. His response was to develop a method that had similarities to, but was demographically more rigorous than, those previously used by Hyrenius. This method is now known as family reconstitution and will be further discussed later in this chapter. With the method, Henry and his colleagues were able to reconstruct the demographic history for a large proportion of the individuals whose baptism, marriage and burial records were kept in the parish, to establish the kinship relation between these people, and to reconstitute their families. The results gave Henry and his group a rare opportunity to examine the demographic history of Crulai. Their work led to numerous interesting discoveries about demographic behavior, and changes in fertility, mortality, and marriage patterns in Crulai over the period from the mid-seventeenth century to the French Revolution (Gautier and Henry 1958).

Following this success, large scale family reconstitution studies, overseen by Henry, were carried out in INED. These studies showed that there were great variations in fertility, mortality and marriage patterns in France in the last few hundred years, and the variations were often related to differences or changes in socio-economic and environmental conditions. These results were subsequently found to be broadly similar to those observed in other parts of Europe. What distinguished France from its European counterparts was its early reduction in marital fertility. 'A demographic revolution' was witnessed in many parts of the nation at the time of the French Revolution, long before such changes occurred in the rest of Europe. These discoveries and the new knowledge gained from such historical demographic investigations led to a major reinterpretation of early modern French history (Goubert 1970). Henry's pioneering work exerted a profound impact on the advancement of demography and the investigation of population history. It offered an important conceptual framework directly linking historical demographic investigations to important contemporary population issues and applied a powerful method of family reconstitution to parish registers that were widely available in western countries. Under this influence, historical demography soon entered an era of rapid development.

## **2.2. The Cambridge Group and the Advancement of Historical Demography in England**

Another milestone in the development of historical demography was the founding of Cambridge Group for the History of Population and Social Structure in 1964. As its name suggests, research activities at the Cambridge Group concentrated, particularly in the early years, largely on the following two areas: (a) population trends in historical England and their inter-relationship with socio-economic changes; and (b) micro-social structure, especially household formation and composition, and its impact on the society. Work on population history at the Cambridge Group also started with family reconstitution. E. A. Wrigley published his family reconstitution results for Colyton, an English parish in East Devon, in 1966 (Wrigley 1966a). The paper immediately attracted the attention of demographers and historians and greatly promoted the

development of historical demography. Wrigley and his colleagues were aware that findings derived from the family reconstitution for a small area were likely to be affected by random variations that limited the broader relevance of the results. They therefore launched a much larger investigation.

Over the next three decades, researchers at the Cambridge Group coordinated family reconstitution of Anglican registers of many English parishes, which were the most important data source for the investigation of demographic changes in England before the modern census started. The work of the Cambridge Group was particularly concentrated on 26 parishes where better registers were available, and this led to the reconstruction of their population history between 1580 and 1837. The results of this reconstruction, as Wrigley and his colleagues evidently show, 'are representative not only of the demographic situation of the parishes from which the data were drawn, but also of the country as a whole'. Their analysis of past demographic behaviors and their outcomes has been conducted in such detail that now much more has been 'known about many aspects of English demography in the parish register period than about the post-1837 period when the Registrar-General collected and published information' (Wrigley *et al.* 1997: cover page). Today, *English Population History from Family Reconstitution 1580-1837* is widely seen as one of the most significant and influential books ever published in historical demography.

Because of the vast amount of work involved in family reconstitution, it is very difficult to apply the method to a national or sub-national population with a large size. Although the family reconstitution undertaken in both INED and the Cambridge Group was conducted by many researchers and took a long time to complete, the total number of parishes for which the population history was reconstructed consisted of only one per cent or less of the total number of parishes in historical England and France. Moreover, while family reconstitution can produce data on population flows such as number of births, deaths and marriages in a given period, it alone cannot provide information about population stocks in a particular area which are also subject to the influence of migration. Without information about total population, aggregate measures such as birth rates, death rates and natural increase rates cannot be computed. To overcome this limitation and to make as full use as possible of parish registration data, researchers at the Cambridge Group undertook, mainly in the 1970s, another investigation into English population history. This study, using aggregated demographic data collected from 404 parishes and the method of 'back projection' that will be discussed later, produced detailed demographic estimations for English population for the period between 1541 and 1871. Based on the reconstructed demographic statistics, E. A. Wrigley and R. S. Schofield thoroughly examined the applicability of the population theory put forward by Malthus and the relationship between changes in economic conditions especially real wages and changes in people's demographic behaviors. Their findings were reported in another significant publication in historical demography, *The Population History of England 1541-1871* (Wrigley and Schofield 1981).

Another major research area vigorously pursued by the Cambridge Group, especially in the early years since its establishment, was the study of family and household in past times. Before the 1960s, it was widely believed that large complex households had predominated in the past and they were only replaced by nuclear households during the

process of industrialization or modernization. Similar views were held concerning the existence of very early female marriage ages in pre-transition Europe. Peter Laslett (1915-2001) analyzed surviving population registers collected from two English villages, Clayworth and Cogenhoe, and showed that the majority of households in the two populations were small in size and simple in structure even before the Industrial Revolution (Laslett 1965 and 1966). At about the same time J. Hajnal, one of Laslett's close collaborators, identified, using early censuses and listings of inhabitants, the existence from at least 1500 of a European marriage pattern. He showed that women in Europe, except for the eastern and southeastern portion, married in their mid-twenties and up to 20 per cent never married at all, and newly married couples generally set up their independent households (Hajnal 1965). These results surprised many researchers, especially family historians.

Under Laslett's leadership and influence, a large scale international comparative study was started in Britain and several other countries. The study found that household formation and composition in historic North and West Europe had the following characteristics. Large number of children left home in their early or mid-teens and worked as apprentices or servants in households that were not related to them. Males and females generally married late, most forming their own households at marriage. Households were relatively small in size and consisted in most cases of a single nuclear family. They rarely had more distant kin although the presence of non-relatives was not uncommon (Laslett and Wall 1972). These characteristics and practices were later summarized by Hajnal as the nuclear household formation system in contrast to the joint family system (Hajnal 1983). The research findings provided great insights into micro-social structure in the past, and were essential to our understanding of the relationship between demographic patterns and changes in economic conditions observed in historical Europe. While these discoveries began to shatter widespread beliefs about the pre-modern society of Western and Northern Europe, England in particular, researchers were aware that the findings were drawn from a limited number of case studies and might not represent the general pattern in the national population. There was also the question of whether the predominance of simple family households observed was the product of demographic constraints such as low fertility, high mortality, late marriage, and low marriage rates rather than the outcome of people's residential preferences or social norms. To examine these possibilities and other concerns, K. Wachter, E. Hammel, and P. Laslett applied computer micro-simulation and sophisticated statistical analysis to the investigation of household formation and composition. Their studies helped to confirm Laslett's early findings about the pre-modern English household formation system, and brought computer micro-simulation into the domain of historical research (Wachter *et al.* 1978).

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