

# A Partial Theory of World Development: The Neglected Role of the Demographic Transition in the Shaping of Modern Society

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## ABSTRACT

**This paper argues that the demographic transition has been central to the creation of the modern world, and that its role in this respect has generally been underestimated. The paper proposes a partial, causal theory – operating at the ‘super-macro’ level, and over the very long run – for several major aspects of world ‘development’. Key elements of the argument are that sustained mortality decline causes both urbanisation and fertility decline. In turn, urbanisation leads inevitably to an increased division of labour and the wider distribution of political power in society. Fertility and mortality decline contribute to reduced gender differentiation and women become more like men. Population ageing probably contributes to the rise of modern democracy. Unless development theory puts the demographic transition at its core, it cannot adequately account for key social–structural transformations which are integral to the concept of development. Copyright © 2001 John Wiley & Sons, Ltd.**

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## INTRODUCTION

**D**iscussion of the relationship between ‘population’ and ‘development’ is usually concerned, above all, with the impact of demographic growth on the economy – in particular, whether population growth has a net positive or negative influence on levels of per capita income. Since the middle of the twentieth century this issue has often been regarded as crucial because in Latin America, Asia and Africa, populations have been growing by 2%, 3% or even more each year.

Views on the direction of this particular relationship – positive or negative? – are divided. There are theoretical arguments on both sides, and empirical studies have come to differing conclusions, with, for example, econometric research pointing in different directions at different times (e.g. see Simon, 1989; Barlow, 1994; Kelley and Schmidt, 1995). Overall it seems reasonable to conclude that the relationship can go either way, depending upon *context*. Perhaps it was positive in the United States during the nineteenth century, but it may well be negative in, say, Malawi or Nepal today.

Clearly there has also been interest in the ‘opposite’ direction of causation, i.e. from development to population variables. Here a major concern has been with the determinants

of fertility, because in the modern world it is birth rate variation which accounts for most of the variation in national rates of population growth. So the focus on fertility has chiefly been because of the presumed negative effects of population growth on the economy (and latterly the environment).

The foregoing brief and highly stylised description of the population and development field prompts three equally stylised observations.

Firstly, the core debates concerning contemporary patterns of population and development have construed both concepts in rather narrow terms. Essentially, 'population' has been reduced to population growth (hence the concern with fertility), and 'development' has been seen as basically a matter of economic level (e.g. per capita income). Secondly, with a few notable exceptions (on which more below), the thrust of most research about the demographic transition has been remarkably inward-looking. Thus while rightly implying that this transition may be the central feature of the modern era (e.g. see Caldwell and Caldwell, 1997: 15), demographers have usually treated it as a matter of birth and to a lesser extent death rates, their determinants and interrelationships. Thirdly, apart from the economic implications of *one* of its outcomes (i.e. population growth), comparatively little attention has been paid to the wider societal implications of the process of demographic transition. Unfortunately this leaves 'economic growth', 'technological change', or – more nebulously – 'modernisation' to occupy centre-stage as the presumed prime forces behind the modern process of world development.

Putting the third observation right is the main purpose of this piece. I will argue that while the immediate social consequences of reductions in mortality and fertility are fairly well appreciated by students of both population and development, the broader consequences of the demographic transition – operating through changes in the residential, age and sex composition of human populations – for the total process of societal development are badly in need of consolidation and re-statement. For, in fact, during the last two hundred years the demographic transition has played a key causal role in the whole process

of modern development, a process which should be construed as relating to overall societal structural transformation. Sadly, appreciation of the pivotal role of the demographic transition in shaping our modern world was probably greater around the mid-twentieth century – and especially among writers like Kingsley Davis, Philip Hauser, Leo Schnore and Wilbur Zelensky – than is generally the case today. Much of what follows draws on their work.

Of course, the 'theory', which is deliberately stated baldly here, *is* partial. The modern process of world development has *not* been propelled solely by changes arising out of the demographic transition. In particular, by harnessing new sources of energy, both economic and technological transformations have played central roles – which have been magnified by the tremendous expansion of travel, trade and communications during the modern age.

That said, my purpose is to emphasise the neglected role of the demographic transition, rather than to discuss the already well-explored contributions of economic and technological changes.

Figure 1 summarises the main relationships addressed in this paper. Starting from a 'spark' – more accurately a very lengthy smoulder – which became a blaze during the later stages of the Enlightenment in eighteenth century Europe, there follows mortality decline and therefore population growth. In turn, these changes *cause* both urbanisation and fertility decline. Subsequently, and just as inevitably, follows population ageing (and the feminisation of the older adult population). The process of urbanisation is itself largely transition-generated; that is, it is an integral component of the demographic transition. Urbanisation has several inevitable structural consequences for society. Those touched on below include: an increase in the division of labour and therefore increased use of systems of (usually market) exchange; a corresponding expansion of systems of government and administration; greater societal complexity in general, including the growth of the institutions of civil society; and a considerable broadening in the basis of political power, to which population ageing probably also contributes. Finally, the aforementioned demographic transformations

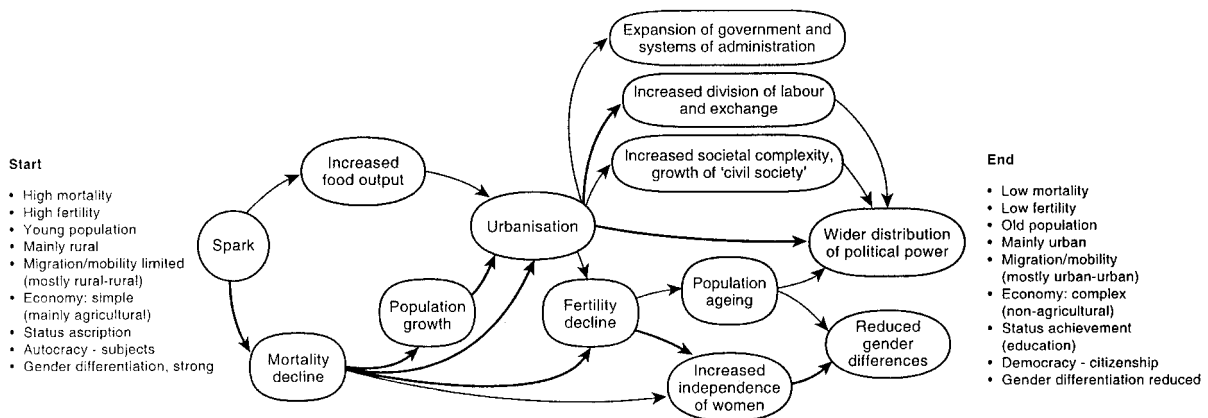


Figure 1. The role of the demographic transition in shaping the modern world. *Notes:* The elements shown in this highly simplified chart, and those listed as 'start' and 'end' conditions, are selected. There is merit in simplicity. The many cases of feedback and interdependence between processes (e.g. increased food production and urbanisation) have been ignored, although in reality these were often necessary for the processes to be self-sustaining. While the text provides some elaboration, inevitably it too is selective – *inter alia* giving somewhat greater weight and attention to those relationships indicated with a bold arrow.

– especially fertility decline – bring about greater lifetime independence for women and less differentiated gender roles.

The relationships presented in Fig. 1 operate at what might be termed the 'super-macro' level, and they often take *great* lengths of time to unfold. Moreover, especially because of the play of extraneous political events, societies can experience long periods of 'sideline' or even 'reversal', irrespective of the stage they have reached in the demographic transition. That is, key aspects of 'development' can be delayed, sometimes for many decades. However, the power of modern systems of communication also means that populations can 'leap-frog' some of the processes shown.

Figure 1 also lists selected 'start' and 'end' conditions associated with these causal processes. Essentially what is represented is the move from the 'traditional' to the 'modern' world. Modern societies are not only different in that people live longer and have fewer children, but their economies and institutional structures are much more complex, people's status is determined more by their own achievements than was formerly the case, and therefore educational attainment becomes more important. With related transformations in the political and familial arenas, these are key aspects of 'development' (properly construed). One could envisage many of them

happening – albeit more slowly – even if there was little improvement in a population's average level of economic well-being.

In summary, the following argument is that the demographic transition and its inevitable sequelae have underpinned key dimensions of the modern process of development. Unless social theory puts this transition at its core, it cannot adequately account for many of the broader structural transformations which are integral to the growth of modern society. It's a big canvas, so in what follows I combine historical and international cross-sectional approaches, and frame the argument in simple, direct terms.

## THE DEMOGRAPHIC TRANSITION

This is not the place to explore the 'spark' and subsequent combustion that occurred during the eighteenth century European Enlightenment. It will suffice to note that the Enlightenment was a huge, complex and varied phenomenon, in which ideas of reason and progress came to the fore.<sup>1</sup> The Enlightenment informed many important events, for example, the American and French Revolutions. In Britain a key characteristic was a concern with applied knowledge, which led, eventually, to the so-called 'Industrial' Revolution. New ways of thinking and investigation lay at the

heart of the Industrial Revolution, and the growth of science was intimately entwined with the development of fresh technologies. With new machinery and products, the occurrence of what writers like Simon Kuznets (1975) and Richard Easterlin (1996) have termed 'modern economic growth' dates from around this time in Britain. Today, everyone, and virtually all aspects of human life, have been profoundly affected by the ensuing changes.

Figure 2 includes the crude birth and death rates for England and Wales, and Sweden – two of several European populations with time series of vital rates stretching back into the

eighteenth century. What we see, essentially, is the classic process of demographic transition. In the middle of the eighteenth century, birth and death rates were high and approximately equal. By the mid-to-late twentieth century, birth and death rates were low and approximately equal. In both countries the crude death rate began to decline before the decline in the birth rate. Accordingly there was a period of population growth that peaked during the nineteenth century. There can be little doubt that the beginnings of mortality improvement in western Europe broadly coincided with – and constituted an integral expression of – the aforementioned wider developments of the

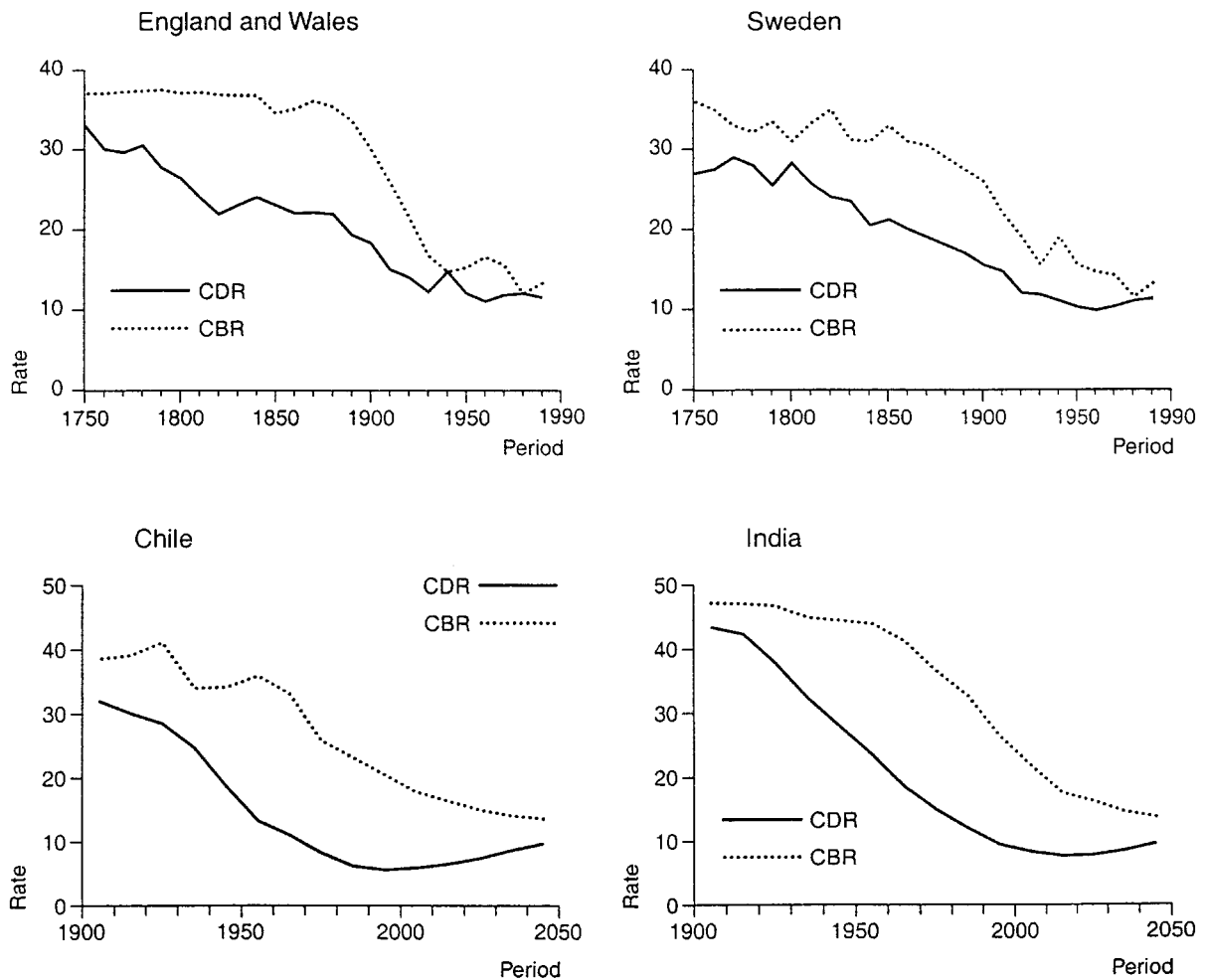


Figure 2. Selected demographic transitions : England and Wales, Sweden, Chile and India. *Note:* Series have been spliced, but this has minimal effect. Figures beyond 2000 are projections. CDR, crude death rate; CBR, crude birth rate. *Data sources:* United Nations (1998); England and Wales: Zopf (1984); Sweden: Merrick *et al.* (1989); Chile: Mitchell (1983); India: Das Gupta (1971).

late eighteenth century. However, as the Swedish and other cases show, mortality decline could begin without an industrial revolution.

For comparison, Fig. 2 also shows the more recent – indeed, still continuing – demographic transitions of Chile and India. It is not surprising that death rates declined later in Latin America, Asia and Africa than was generally the case in Europe. Among other things, it took time for the manifold implications of the ‘spark’ to be translated into public health initiatives and technologies applicable to these different locations. Nor is it surprising that the basis of these later mortality and fertility declines has in many ways been different, and that they have generally been somewhat faster. It has long been appreciated that more recent transitions would probably occur more rapidly (Kirk, 1971). Likewise, it has long been recognised that mortality and fertility falls in the developing world would almost certainly happen in progressively poorer settings. Apropos mortality, Adolphe Landry suggested as much back in 1934 (see Kirk, 1996: 362–363). Similar conclusions regarding both mortality and fertility have been apparent from time-shifts revealed by international cross-sectional comparisons based on levels of per capita income (e.g. see Preston, 1975; World Bank, 1985: 29–31) and from simulations as to how demographic parameters were likely to behave with respect to per capita income in the future (see Dyson *et al.*, 1978: 61–63).

Although there are differences of detail and time-depth, Fig. 2 shows that the populations of Chile and India are undergoing the same basic experience as happened in Europe. The death rate declines first; the birth rate declines later; and there is population growth in-between. That is the rule. Even the sometime supposed exception of France experienced considerable population growth while the birth rate declined. Provided we focus on major populations, there are very few, if any, real exceptions (see Chesnais, 1992: 147; Kirk, 1996: 383). The demographic transition is a lengthy period of marked disequilibrium (i.e. population growth) during which the birth rate adjusts to the fact that the death rate is falling because of the establishment of a new

mortality regime.

The particular factors which condition the process of fertility adjustment – be they cultural, institutional, technological or economic – are contingent, and their mix will vary with time and place. So in one population where incomes are increasing, social scientists may account for fertility decline in terms of rising incomes, e.g. people are ‘preferring consumer durables to children’; while in another population, with equal validity, their explanation may be that incomes are falling (or that people think they are falling) so parents can only afford to have a smaller number of children. In both cases, essentially, economics provides an *idiom* of account, but has no real predictive power.

Relatedly, analysts have often confused causal factors with those that are better regarded as ‘facilitating’. The provision of family planning services, or education for women, may well facilitate fertility decline, but this is *not* the same as causing it. One recalls the delightful suggestion of Stanley Lieberman (1985: 100) that, confronted with trying to explain gravity, a typical social researcher might study the speed of different objects as they fell to the ground (outside of a vacuum) and then try to account for the phenomenon in terms of variation in the characteristics of the objects themselves (obviously, a coin falling faster than a feather). Plainly, however, this would *not* account for gravity – the tendency of *all* objects to fall to the ground irrespective of their characteristics. Yet with countries, households, couples and women corresponding to ‘objects’ (units) in different types of analysis, this is precisely the mistake that many social scientists have made when trying to explain fertility decline (on this see Lieberman, 1985: 88–119; also Ní Bhrolcháin, 1997: 362–363).<sup>2</sup> In short, study designs have tended to be descriptive rather than explanatory.

The *remote* force that, operating at the ‘super-macro’ level, has ultimately caused *all* sustained birth rate declines since the late eighteenth century is massive mortality decline. Confronted by a sustained decline in the death rate, no society can continue for many generations with a total fertility rate of five or six live births per woman. The stresses and strains inherent in such a situation (e.g. in terms of land fragmentation, or household overcrowd-

ing) are simply too great, irrespective of what the level of per capita income or any other variable may be. Arguably the most convincing single aggregate mechanism through which this process of fertility adjustment has worked – in both historical and contemporary settings – involves changes in relative cohort size (see Macunovich, 2000). Because, with various lags, mortality decline eventually produces larger and larger cohorts entering the working age range, other things being equal it has a depressing effect upon relative levels of living and so forces young adults to choose between either maintaining their family size or experiencing a fall (or reduced rate of improvement) in their economic well-being. The mortality improvement and age structural change which ultimately underlies the emergence of this choice is not normally recognised by the people who are actually involved in making it.<sup>3</sup>

So, as Dudley Kirk has stated in a masterful review: '[i]f there is a single or principal cause of fertility decline, it is reasonable to ascribe it to falls in mortality, which was the major cause of destabilisation' (Kirk, 1996: 379). Or to quote Chris Wilson:

'[t]he most significant factor ... in fertility decline lies in earlier and concurrent declines in mortality. The socio-economic and cultural characteristics of a population determine the nature and speed of this process of adjustment [but] they are not the prime-movers.' (Wilson, 1995: 23)<sup>4</sup>

Given mortality decline, some *rough* degree of equilibrium must be restored. Eventually, inevitably, and usually with little or no appreciation of the underlying cause, people reduce their fertility.

Admittedly, this is a restricted formulation of demographic transition theory. But given that very considerable mortality decline has occurred throughout the world, it does at least predict what will happen to fertility in every national population (it will fall). Moreover, this formulation might apply equally well in reverse. Referring back to Fig. 2, if the death rate in any of the countries shown was to experience an uncontrollable and sustained long-run rise back to pre-transitional levels (and, for argument's sake, assuming that the

rise went unnoticed and that there was no international migration), then this formulation suggests that there would eventually be a broadly matching rise in the birth rate.<sup>5</sup> Again, the fertility response would lag the change in the death rate. Incidentally, many of the explanations that would be used to 'explain' the fertility rise in such a 'reverse transition' already exist. In populations where incomes were increasing, a ready account would be that people could now afford more children; whereas in populations where incomes were falling it would be said that people required more children for economic support. These explanations might reflect the motives and dispositions applying in particular circumstances, but neither would capture the high-level, remote causal process that would actually be at work.

To illustrate sections of the following argument, Fig. 3 presents selected scatterplots for the world's 100 most populous countries in the early 1990s.<sup>6</sup> Because mortality decline is the main motor of the demographic transition, Fig. 3 employs life expectancy at birth as a broad gauge of the extent of the progress of a country through the transition, although total fertility (a transition closing parameter) would serve nearly as well. Since the following arguments generally address aggregate rather than individual-level phenomena, it is worth stressing that here the demographic transition is viewed as complete when *both* the crude death and birth rates of a population have reached levels that are low and approximately equal.<sup>7</sup>

## URBANISATION AND MIGRATION

Clearly, urban growth, urbanisation and migration (particularly rural to urban migration) are closely linked. Yet it is surprising how little they have been integrated into the overall process and theory of the demographic transition.<sup>8</sup>

It is widely acknowledged that if more children are surviving because of mortality decline, then the conditions of urban life are particularly inimical to continuing high fertility. This is reflected in Frank Notestein's famous summary sentence as to why fertility fell in the West:

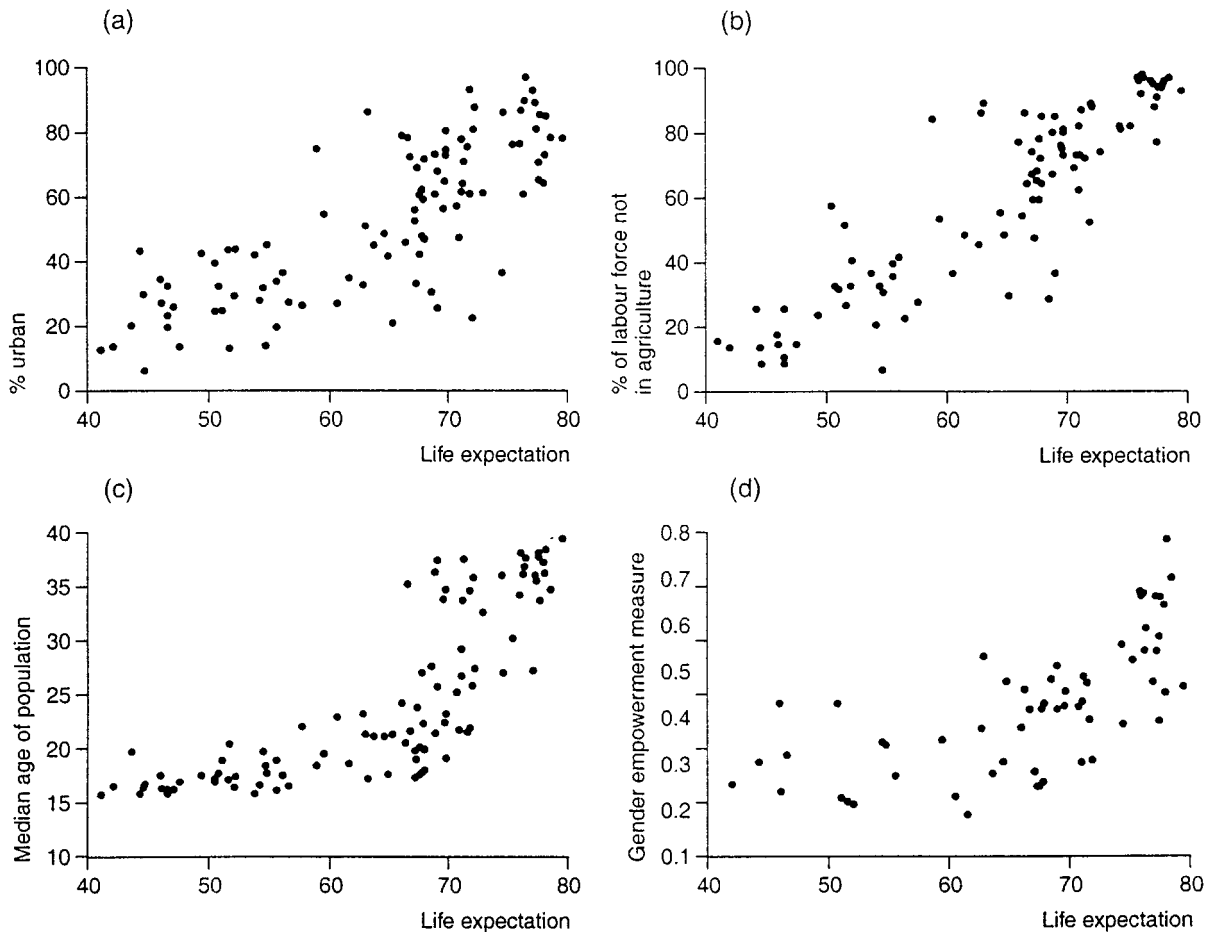


Figure 3. A cross-sectional view of selected measures of development in the mid-1990s for the 100 most populous countries. *Notes:* Here, cross-sectional data are being used to make inferences concerning changes through time. For reasons mentioned in the text, it might be expected that relationship (d) would be non-linear and possibly lagged on (c). Relationships (a) and (b) appear to be broadly linear. In this context it is noteworthy that both urbanisation and life expectancy tend to be S-shaped with time (e.g. see Fig. 4). *Data sources:* United Nations (1996, 1998); United Nations Development Programme (1997); World Resources Institute (1994, 1996, 1998).

'In short, *under the impact of urban life*, the social aim of perpetuating the family gave way progressively to that of promoting the health, education, and material welfare of the individual child; family limitation became widespread; and the end of the period of [population] growth came in sight.' (Notestein, 1945: 41, my emphasis)

Understandably here Notestein flavours the entire process of family limitation and fertility decline with a strong dose of the urban. And although there may be periods when urban fertility levels exceed those in rural areas (e.g.

because traditional patterns of breastfeeding and sexual abstinence are disrupted in towns), it is invariably the case – in the past and in the present – that urban areas lead in the fertility decline response and influence rural populations in their adoption of birth control.<sup>9</sup>

Because urban life magnifies the stresses and strains posed by mortality decline, urban growth and, still more, urbanisation (i.e. the rise in the proportion of the population living in urban areas) can probably be regarded as contributing to the fertility decline response, even if they are not the ultimate 'prime-movers' (see Fig. 1). However, such stresses

and strains are commonly discussed as if urban growth and urbanisation are themselves caused by factors extraneous to the demographic transition. For example, economists tend to focus on the contribution of rural-urban wage differentials and rural-urban migration in explaining urban growth; and modern economic growth (itself originating from the spark) is taken as the principal cause of urbanisation (e.g. see Easterlin, 1996: 48-50). It seems enough to assume that rising incomes will be increasingly spent on industrial products and services – sectors which benefit from the concentration and economies of scale that are available in towns.<sup>10</sup>

Now it is patently true that all human populations have been predominantly rural prior to entering the demographic transition. In 1800 perhaps 8% of Europe's population lived in towns; the figure for Asia in 1900 was similar (Grauman, 1977: 31). There are good demographic reasons why this was so. Although, both historically and in the contemporary developing world, mortality has often declined more rapidly in urban than in rural areas, at the *start* of this decline almost everywhere death rates were appreciably higher in the towns. Because of the predominance of infectious diseases, mortality varied directly with population density and therefore urban areas were demographic 'sinks'.<sup>11</sup> Under these circumstances any urban growth depends entirely upon rural to urban migration and, effectively, there is a ceiling on how 'urban' a major population can become. In 1800, England's population was roughly 27% urban and that of Holland about 33% – high figures, which cannot have been too far from the ceiling (see de Vries, 1990: 57; Wrigley, 1987: 170-182).

However, as de Vries (1990) and others have elaborated, the sustained decline in mortality that drives the demographic transition causes this situation to change in several ways.<sup>12</sup> Firstly, and at a relatively early stage, urban natural increase becomes positive as the urban death rate falls below the urban birth rate. At this point the towns cease to be 'sinks', removing the ceiling on urbanisation; and the demographic growth of smaller settlements may also lift some of them into the 'urban' category. Secondly, and usually later, the

urban death rate falls below the rural death rate, opening up the possibility that the urban rate of natural increase will exceed that of rural areas. This is what de Vries terms 'autonomous urbanisation', when the process becomes self-sustaining and possibly rapid.<sup>13</sup>

Finally, urban growth and urbanisation are influenced by rural to urban migration. Indeed, in the pre-transitional phase the very existence of the urban sector depends upon a net inflow of people from rural areas. Provided this inflow continues then, other things being equal, it helps to fuel urban growth as soon as the towns cease to be 'sinks'. Also, the decline of the rural death rate (and consequent rise in the rural rate of natural increase) raises the volume of rural to urban migration.<sup>14</sup> In the initial stages of the demographic transition, when the urban sector is relatively small, this migration is likely to be the main cause of urban growth and urbanisation. But as the transition and urbanisation proceed, so urban natural increase becomes the predominant cause. This cross-over may happen well before the total population becomes half urban (Keyfitz, 1980: 149-156). Indeed, after initially rising, the volume of rural to urban migration declines during the later stages of the transition as – with low rates of rural natural increase – does the absolute size of the rural population. Today most developing countries are well into the demographic transition, in that death rates have been declining for decades. Nevertheless in sub-Saharan Africa, the most backward region in this respect, rural to urban migration may still be the main cause of urban growth, whereas in Latin America and most of Asia, urban natural increase has long been the predominant cause (Preston, 1979: 199).

Figure 3(a) plots national levels of urbanisation against my preferred index of a country's progress through the demographic transition (i.e. national life expectancy). Due to the influence of many other factors in particular countries – factors which might be conveniently subsumed under the broad headings of 'history' and 'geography' – some degree of scatter is to be expected. Also the definition of an 'urban' area often varies very significantly between countries (see UNCHS, 1996: 78) and this certainly accounts for much of the scatter.



However, overall Fig. 3(a) illustrates well how the level of urbanisation increases fairly steadily (and inevitably) as the transition itself proceeds. Indeed, of the world's 100 most populous countries in the early 1990s, only one (Burundi) was still classed as having under 10% of its population living in urban areas. The modern process of urbanisation, whereby the proportion of people living in towns rises from under 10% to over 80%, is inconceivable without the demographic transition, which is its principal underlying cause. Interestingly, it is a process which seems to be occurring at approximately the same pace in the contemporary developing world as applied in the developed world during the last century (see Preston, 1979: 196–198).

Additional facts that are required for this argument are the initial existence of a limited urban sector, plus some rationale as to why both before and throughout the entire transition people continue to migrate from rural to urban areas. In the latter context, part of the explanation may be that human beings have a natural desire to live in sizeable groups.<sup>15</sup> Towns tend to be interesting and lively places. Those rural out-migrants who maintained the existence of the early towns certainly did not do so from rational and informed decisions as to their relative risks of dying (although higher death rates probably raised the chances for promotion and advancement in urban areas). As with the explanation of fertility decline, the proximate motives for rural to urban migration are complex and they vary with context. Again, they include both non-economic and economic considerations (e.g. perceived better urban social and employment prospects). They also include both 'push' and 'pull' considerations. Aspects of modern economic growth – such as rising living standards and increased concentration of production – have undoubtedly played major parts in stimulating the processes of urban growth and urbanisation. However, it is unclear whether such economic changes are absolutely necessary for these processes, whereas the demographic transition is. Certainly it is possible to envisage urbanisation occurring without concomitant increases in per capita income. There is evidence that this happened in Latin America in the past (see Davis and Casis, 1946: 187; Echavarria and

Hauser, 1961: 34–37) and it may be occurring in parts of sub-Saharan Africa today.<sup>16</sup> It is also worth noting that in western Europe it was not until around the mid-nineteenth century that industrialisation began to contribute to the growth of existing towns (Hohenberg and Lees, 1985: 198–200).

It might be argued that there are cases where the demographic transition has occurred, but without commensurate urbanisation. In the European context, for example, it is sometimes remarked that whereas Sweden's birth rate was declining from perhaps the 1860s (see Fig. 2), as late as the 1880s over 70% of the labour force was still engaged in agriculture, forestry and fishing. However, this argument confuses the *start* of the fertility transition with the *end* of the demographic transition. By 1980, a date which better reflects the transition's end in Sweden (as gauged by the crude birth rate), 83% of Swedes lived in towns.

China might be claimed as another exception. When the economic reforms took place around 1979, the total fertility rate was about 2.6 live births, life expectancy was about 67 years, and with severe restrictions on migration only about 20% of the population lived in towns. Given the massive size of China's floating population, it is understandable that estimates vary as to what proportion of the country's population now live in urban areas. However, it is certainly much greater now than in 1979, despite continuing, if lessened, restrictions on human movement.<sup>17</sup> So the evidence suggests that given its stage in the demographic transition (and it is still some distance from completion), China's level of urbanisation is catching up fast. With South Africa, China is a prominent case where for political reasons there was a major effort to restrict urbanisation. But it was only possible to postpone this development for a few decades.

In concluding this section, it is clear that urbanisation has major implications for patterns of human mobility. In populations in the early stages of the demographic transition, most migration must be between rural areas, simply because most people live in rural areas. As urbanisation proceeds, so an increasing proportion of moves will involve both the rural and urban sectors. Eventually, however, urban

to urban migration will predominate because most people now live in towns. This change from rural-rural to urban-urban migration is arguably the most important single feature of Zelinsky's (1971) 'mobility transition'. Clearly improvements in transport (i.e. technological change) have increased human mobility too, as indeed has fertility decline.

### CONSEQUENCES OF URBANISATION

Since the late eighteenth century, urbanisation has been fundamental to the modern process of world development. Almost everything important has happened in towns. The only exception has been the transformation of agriculture which has produced increasing supplies of food from an eventually shrinking rural population. That said, however, there is no doubt that the agricultural transformation benefited hugely from: (i) the growth of urban demand; (ii) the many technical innovations (some specifically agricultural, others, like the petrol engine, more general) which were developed in urban areas; and (iii) the greatly increased monetisation of the economy which was fostered by urbanisation (e.g. see Bairoch, 1981: 65-72).

When discussing the broader consequences of urbanisation, it is essential to remember that it involves not only greater population concentration (i.e. density), but also increased *scale*. The population growth multiples attaching to European demographic transitions were commonly of the order of two or three; those applying to contemporary developing countries can be between six and ten (McNicoll, 1984: 181).

Clearly, urbanisation has inevitable consequences for systems of transport and communication, trade and exchange, specialisation and the division of labour. All these increase, usually synergistically. Moreover, as already intimated, the rural population benefits from the growing urban sector. Labour productivity tends to increase in the towns. The growth of towns also generates dynamic and exciting social events which are almost inconceivable in solely rural settings (e.g. see Wirth, 1938). Hauser (1965: 12) went as far as to suggest that the increased rates of social interaction of urban life produce 'in the social realm a major

transformation the equivalent of genetic mutation in the biological realm'. Analysis of these effects has a rich history which certainly cannot be done justice in this paper. Indeed, the process of urbanisation underpins most of the classic sociological axes of differentiation (e.g. 'mechanical' versus 'organic' solidarity (Durkheim), 'gemeinschaft' versus 'gesellschaft' (Tönnies)) which have been designed to compare the traditional and modern worlds. Here I touch briefly on a few of the most germane effects.

Although the demographic transition causes urbanisation, it is evident that for urbanisation to happen there must be sufficient agricultural (and energy) supplies to feed the growing urban sector. Also, to the circumscribed extent that rural-urban migration contributes to urban growth, it is clear that agricultural productivity increases must be sufficient to release people to move to urban areas.<sup>18</sup> That a town cannot exist unless there is enough food to support its population is obvious. However this fact is often taken for granted by contemporary social scientists - presumably because they mostly live in circumstances where food is treated as a commodity like any other, and people are generally distanced from the conditions of its supply. Anyhow, historically in Europe there may have been ways of raising agricultural productivity which previously had been held in reserve, and which could be used to support the transition-generated urban expansion which was underway in the late eighteenth century. However, soon there were agricultural productivity increases deriving from the 'spark' (e.g. use of tile drainage) which were further stimulated by the rising level of demand and many technical innovations which came from the growing towns (e.g. see Bairoch, 1981: 65-72; 1990; Wrigley, 1987: 189-193). The necessary productivity increases in food output generally came initially from areas located relatively close to the towns. Later, however, additional flexibility was introduced by food imports, notably from Russia and North America. All these developments brought about improvements in transport and storage.

Similarly, urbanisation in the contemporary developing world is based upon many agricultural productivity increases which ulti-

mately stem from the spark – and most of them have been developed by people based in the urban sector (e.g. chemical fertilisers from the late nineteenth century, and pesticides and herbicides during the twentieth; see Bairoch, 1981: 68). It is still commonly the case that agriculture is stimulated most in rural areas located close to rapidly expanding towns. Nairobi and Hanoi are just two of many examples where the level of agricultural intensification and road density fall off sharply as one moves further away from the urban centre. Moreover, today many growing towns – notably, although by no means solely, those in the Middle East – rely on food imports to meet a significant fraction of their total consumption (Alexandratos, 1995: 145–150). Nowadays these imports come mostly from North America.

So while food supply difficulties may have restricted the growth of particular towns at particular times in the past, there is no reason to believe that the overall process of urbanisation has been much constrained by such difficulties in either the developed world historically or the developing world today. Indeed, there may be considerable flexibility in the relationship, partly because levels of physical activity are usually much lower in urban areas (which other things being equal reduces food requirements) and partly because the generally better health conditions enjoyed in urban areas may have a similar effect.<sup>19</sup>

Urbanisation leads inevitably to an increase in the division of labour in society. In this context Fig. 3(b) shows how the proportion of the labour force working outside of agriculture increases fairly steadily as the demographic transition proceeds. In the most advanced countries today the figure is often over 95%. By itself the need to provide the growing urban sector with agricultural products entails a major and irreversible expansion of the systems of exchange, transport and storage which together furnish these products. Urban growth also poses new problems relating to matters like water provision and waste disposal. In addition, the urban sector must provide something in return for the products it receives from the rural sector. At its most basic this can involve the recycling of nitrogen through trade in human waste – a practice still widespread in

China and one which only declined in parts of Europe during the nineteenth century when the introduction of mass sewage systems made it less practicable. However, the inevitable expansion of urban non-agricultural employment meant that there was much else to trade.

Published around the start of the decline in the death rate which marked the onset of the demographic transition in western Europe, the opening pages of Adam Smith's *Wealth of Nations* (1776) promised clearly that population growth – in particular the appearance of bigger towns – will cause an increase in the division of labour. The rationale is simple: the bigger and more concentrated is the market, the greater are the economic benefits to be had from increased occupational specialisation.

Later scholars also put population increase and urban growth at the very heart of their explanations for the expanded division of labour. Thus, drawing biological parallels, Herbert Spencer's explanation reduced almost entirely to an increase in population scale. He stated simply that: 'along with the increase of size in societies goes increase of structure' (quoted in Schnore, 1965: 6). Émile Durkheim appreciated better that it was *urban* population growth, especially, that was crucial to the explanation of increased occupational specialisation. While acknowledging the strong facilitating effect played by improved transport and communications, his argument hinged around the role of increased social interaction and competition in the expanding urban sector. Thus: '[i]f work becomes divided more as societies become more voluminous [i.e. larger in size] and denser [i.e. more urban] it is ... because struggle for existence is more acute' (quoted in Schnore, 1965: 9). Finally for Karl Marx in *Das Kapital*:

'[t]he foundation of every division of labour that is well developed, and brought about by the exchange of commodities, is the separation between town and country ... the whole economic history of society is summed up in the movement of this antithesis.' (quoted in Hohenberg and Lees, 1985: 99)

So, as well as taking people off the land, urbanisation causes an unprecedented increase in the division of non-agricultural labour in society and therefore, effectively,

increased dependence upon monetary exchange. These developments happen *inter alia* because of (i) the requirement to supply the growing urban sector with rural products, especially food, (ii) the need to develop goods and services to exchange for these products, (iii) the creation of a larger and more concentrated market which encourages specialisation, (iv) the heightened interaction and competition found in the conditions of urban life, and (v) the growing requirement to address certain issues that are more specific to larger urban centres (e.g. problems of fire, water and waste, and later, matters like health and transport).

Four related observations are appropriate before moving on. Firstly, the increase in specialisation resulting from urbanisation is not necessarily restricted to the more essential (e.g. food supply) and more 'productive' (e.g. industrial) sectors of the economy. Rather, it can extend into the religious, political, legal, artistic, educational and other domains of life. Even the low-wage service sectors found in the urban areas of many developing countries today encompass considerable employment differentiation. Moreover, the prospects for individual social mobility tend to rise as society becomes increasingly urban and complex; and social mobility is favourable to economic development (e.g. see Bairoch, 1981: 73).

Secondly, with the increase in the division of labour so there is an inevitable concomitant rise in the interdependence between society's increasingly more specialised parts. Within the overall framework of the demographic transition, an economy formerly dominated by subsistence agriculture gives way progressively to one characterised by complex exchange. In practice this usually means the rise of the market. Greater specialisation also means that education and/or training become more important - an effect which is likely to be heightened by the continued migration of unskilled labour from rural areas. Status ascription wanes, while status achievement grows (Fig. 1).

Thirdly, in addition to the market, other mechanisms of coordination and integration are required. The most important relate to the expansion of government and its various systems of administration, such as the police and the law. In the economic realm, manage-

ment and labour organisations may emerge as part of the meshing process. Other sectors such as the press and non-profit organisations may contribute to the necessary countervailing integrative processes. The growth of social responsibility (e.g. charitable trusts) may receive a boost from urbanisation. Indeed, to a large extent the plural institutions of modern 'civil society' arise out of urbanisation.

Lastly, it is worth stressing how profound and pervasive are the cumulative effects arising from urbanisation. At the individual level one has only to see how in the developing world poor people from rural areas can have their horizons literally transformed from their first experience of living in a town. In a post-transitional society 20% of the population may still be classified as living in 'rural' areas; but this means very little, because effectively *everyone* is now 'urban' irrespective of where they live.

In concluding this section I stress that much (although by no means all) of the increase in occupational specialisation that comes from urbanisation could probably occur independently of any change in economic level. That is, the heightened division of labour produced by sustained urban growth is partly a *structural* development, which one could well envisage happening even if there were to be little rise in living standards. To this must be added the important proviso that food and other essential supplies must still be forthcoming from rural areas. In practice, the very high levels of rural labour and land productivity that are found in the most developed countries today owe a great deal to modern economic growth and technological change - processes which have massively increased the degree of occupational specialisation throughout the wider economy.

## THE RISE OF DEMOCRACY

Recognition of a connection between town life and democracy dates back to the time of classical Greece. Another prominent flowering of democratic ideas occurred briefly in the Italian city-states during the Renaissance. However, these were situations where only a minority of people actually lived in towns, and although the conditions of urban life seem to

have had an effect in raising questions about the basis of political power, in practice autocracy was more likely to apply than was democracy.

That said, political theorists have long been aware that the rise of democracy since the late eighteenth century was somehow linked to the process of urbanisation. For example, Seymour Martin Lipset observed that the existence of democracy is linked to the degree of urbanisation; and Harold Laski stated plainly that 'organised democracy is the product of urban life' (see Lipset, 1963: 34; Laski, 1937).<sup>20</sup> More recent scholarship on the emergence of the institutions of modern democracy also uses a vocabulary that is overwhelmingly urban. Thus in nineteenth and early twentieth century Europe, the demand for popular elections usually came from the growing urban working class who demonstrated, protested, and 'took to the streets'. As Hohenberg and Lees (1985: 284) correctly stated:

'[t]o effect large-scale protests, people must be mobilised, money must be raised, information must be shared. These are quintessentially urban services'.

In short, the articulation of interest which has underpinned the long process of democratisation in Europe (and elsewhere) has occurred almost entirely in urban settings.<sup>21</sup>

During the eighteenth and early nineteenth centuries there was much theorising about democracy by writers like Rousseau, Tocqueville, Paine, Bentham and Madison – all men who at various times were the *subjects* of autocratic European states. However, the political systems of western Europe, and even the US, were all fairly autocratic then. The attainment of modern liberal democracy – with equal voting rights for all adult *citizens* (and, of course, the word itself is significant) – is a young flower. In the US and western Europe it did not really bloom until the second half of the twentieth century, the US only achieving genuine universal suffrage in 1965 and Greece, Spain and Portugal switching suddenly from autocracy to their current status of full democracies in the late 1970s.<sup>22</sup>

The point I wish to stress is that in North America and western Europe the demographic and democratic transitions have occurred

broadly coterminously over a period of two centuries. This was not coincidence. A young and dispersed rural population is relatively easily ruled by a small number of traditional autocrats (e.g. kings, emperors) holding the reigns of power.<sup>23</sup> But the demographic transition greatly increases, concentrates and (eventually) ages the population, and in these circumstances political power must eventually become more evenly diffused in society. Moreover, the resulting increase in population scale means that representative democracy, with political parties, must supplant the ideal of direct, participatory democracy.<sup>24</sup> On the rise of modern liberal democracy, Francis Fukuyama has observed that people come to 'demand democratic governments that treat them like adults rather than children' (1992: xiv). While historically this demand was concentrated and fermented first in urban areas, later it was probably augmented by population ageing, which, quite simply, increased the proportion of 'adults' and reduced the proportion of 'children' in society (Fig. 1).<sup>25</sup>

If we consider individual countries, then the relationship between urbanisation, ageing and the nature of the prevailing political institutions is highly variable. There can be extremely large timing discrepancies between demographic and democratic developments, and changes in the basis and distribution of political power within nations are often abrupt. Moreover, populations that are urbanising and ageing and with political institutions that are generally developing in the predicted (i.e. more open) direction can suddenly be overwhelmed by extraneous events: e.g. witness Germany in the 1930s. On the other hand, especially in today's 'global village', it is increasingly possible for democratic ideas and institutions to jump ahead of demographic trends. India since 1947 is a fairly good example. More recent 'leap-frog' cases include Ecuador, Bangladesh, Niger and South Africa. However, the present argument implies that, other things being equal, the basis for the democratic developments in these countries is more fragile precisely because they have not yet completed the demographic transition. Such considerations also mean that the demographic underpinnings of the process of democratisation are best examined at a highly

aggregate level.

Figure 4 shows trends in measures of urbanisation and democracy for major world regions since 1800. The 'Polity 3' data-set, which gauges democracy by the general openness of political institutions (0 = low; 10 = high), has been used to chart trends in democracy. For several reasons the comparisons shown must be interpreted with care. Firstly, the definition of the regions has been determined mainly by the availability of long-run estimates of urbanisation. Here 'Europe' includes both Turkey and the former Soviet Union, but excludes the US and Canada.<sup>26</sup>

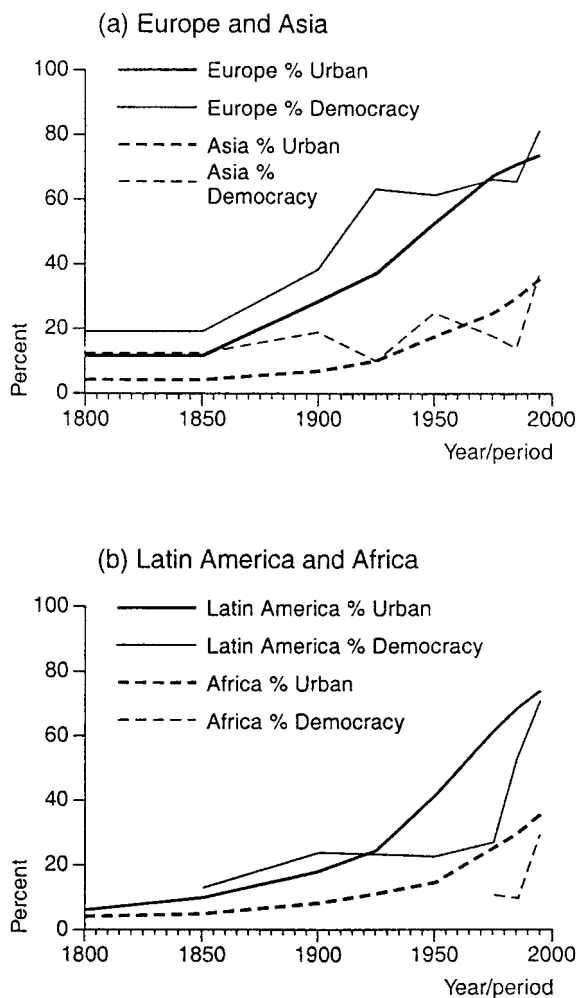


Figure 4. Urbanisation and the growth of democracy in Europe, Asia, Latin America and Africa since 1800. *Data sources:* Grauman (1977); United Nations (1996); Polity 3 database website (2001).

Secondly, the estimates of both urbanisation and democracy are sometimes based on incomplete data and they inevitably involve judgement. Thirdly, the urbanisation estimates used are population weighted, whereas those of democracy are unweighted averages – a consideration which complicates some of the comparisons (see below). Finally, for any given year the democracy scores used to compute the summary regional averages are only available for politically independent countries (i.e. colonies are not represented). Therefore the number of countries for which scores are available varies through time, e.g. tending to decline with Italian and German unification, but increasing with decolonisation and the break-up of the Soviet Union.<sup>27</sup>

Despite these problems, several interesting points arise. It is clear from Fig. 4 that both the level of urbanisation and the level of democracy advanced fairly steadily in Europe from the beginning of the nineteenth century. Given the different nature and basis of the measures used, it would be wrong to conclude that the level of democracy moved ahead of the level of urbanisation at this time. On the contrary, examination of the base data reveals that those countries responsible for the relatively high democracy scores of the nineteenth century were much more urbanised than the average levels plotted for the region as a whole.<sup>28</sup> Interestingly, Fig. 4 hints at a slight increase in the pace of democratisation in Europe between about 1900 and 1925, a feature which has been identified as a 'democratic surge' (see Markoff, 1996: 73). Examination of the base data shows that this mainly reflects significant political advances in Denmark, Sweden, Belgium, the Netherlands and the UK. It is hard not to remark that in these countries this was also a period of sharp, indeed unprecedented population ageing.<sup>29</sup> Finally, between about 1925 and 1990 urbanisation increased, but democracy stalled because of the existence of fascist and, still more, communist states.

Turning to the other regions, Asia's progress in Fig. 4 apropos both urbanisation and democracy has been slow, although roughly in step. As in Europe, the relatively high measures of democracy (compared with urbanisation) indicated for the nineteenth century are misleading because they are based

on only eight countries.<sup>30</sup> With the inclusion of several new and relatively open political systems – especially Israel, and former colonies like Sri Lanka, Myanmar and India – the democracy measure for Asia improves slightly by 1950, before declining in the 1970s and 1980s with political setbacks (e.g. in the Philippines and Myanmar) and with the inclusion of several small Middle-Eastern states (e.g. Kuwait, Bahrain). However, by the mid-1990s about 35% of Asia's population lived in urban areas and its unweighted democracy score was 36%.

Figure 4 shows that Latin America is not only highly urbanised, but most countries in this region now have democratic political institutions. However, as in Europe – although for somewhat different political reasons – much of the twentieth century was a period of democratic stagnation. The severe economic consequences of the market crash of 1929 produced military take-overs and subsequent state-led developmentalism in many countries, and the process of democratisation was frozen further by reactions to the 1960 Cuban Revolution (Cammack, 1997). However, since the 1980s, democracy has advanced hugely in Latin America. On the present argument, its level has 'caught up' with the underlying demographic conditions. Again, it is tempting to note that the period since the 1980s has been a time of sudden and sharp population ageing in Latin America.<sup>31</sup> Finally, and despite its many problems, since the mid-1980s Africa too seems to have experienced a limited 'democratic wave' in the expected direction (Lansner, 1995: 27). In this case, however, urbanisation may have played a role, but population ageing could not.

Overall, at the aggregate world regional level, there is currently a considerable degree of concordance between urbanisation and democracy levels (Fig. 4). Europe leads, followed closely by Latin America. Asia, and then Africa, are a long way behind, but on a rising trend.

Table 1 summarises data for the 100 most populous countries around 1995 and illustrates the same basic point. In general, the greater the degree of urbanisation the higher tends to be the level of democracy. Furthermore, at any level of urbanisation, the smaller

the proportion of children in the population, the more democratic are the prevailing political institutions. Figure 3(c) illustrates the obvious point that, because it results from fertility decline, population ageing occurs relatively late in the demographic transition. Therefore the contribution that population ageing makes to the process of democratisation must also occur relatively late.

In conclusion, neither Fig. 4 nor Table 1 'prove' any causation. They do not control for economic or educational level, nor the increase in market relations and communications which have certainly assisted the rise of democracy. Inevitably, the mix of proximate factors promoting democratisation has varied in different contexts. For example, it is perfectly credible that an individual nation's move from autocracy to democracy could result from *either* an increase *or* a decrease in socioeconomic equality arising out of the process of urbanisation. Thus an increase in equality – arising, for example, from broad-based economic growth – might be considered as a natural basis for the more equal distribution of political power in society; indeed, many of Lipset's (1963) arguments on the social basis of democratisation are in precisely this vein. On the other hand, however, a decrease in socioeconomic equality which leads to, or

Table 1. Average democracy scores for the 100 most populous countries, by levels of urbanisation and population ageing, mid-1990s.

| % urban | % population aged 15 and over |          |          | Total     |
|---------|-------------------------------|----------|----------|-----------|
|         | <57%                          | 57-74%   | >74%     |           |
| <34%    | 2.6 (20)                      | 3.4 (13) |          | 3.0 (33)  |
| 34-66%  | 3.0 (10)                      | 4.2 (16) | 7.1 (8)  | 4.5 (34)  |
| >66%    | 2.0 (2)                       | 5.9 (11) | 8.9 (20) | 7.5 (33)  |
| Total   | 2.7 (32)                      | 4.4 (40) | 8.4 (28) | 5.0 (100) |

Notes: The brackets contain the number of countries in each cell. Libya and Jordan (scored respectively at 0 and 4) fall in the cell combining urbanisation above 66% with less than 57% aged over 15. For Afghanistan, Somalia and the Democratic Republic of the Congo (formerly Zaire), the Polity 3 data-set give no democracy scores for 1994; accordingly I have arbitrarily scored these countries at 0, although this makes little difference to the results.

Sources: Polity 3 database (2001); World Resources Institute (1994, 1998); United Nations (1998).

threatens, a revolution may also contribute to the establishment of democratic elections; people of wealth and power may well reconcile themselves to elections if the alternative is conflict and ruin (Markoff, 1996: xv). Precisely the same point applies here as in the preceding discussion of fertility decline: that in different contexts, fundamental, remote processes can work themselves out in different ways and with different rationales.

### REDUCED GENDER DIFFERENTIATION

This section returns briefly to more familiar, although no less important ground. Reduced gender differentiation is widely regarded as a key dimension of development. The essential point here is that the changes in mortality – and especially fertility – that are central to the demographic transition have led to increased female lifetime independence and caused a reduction in differentiation between men and women (Fig. 1). Put baldly, as childbearing and childrearing have come to occupy a much smaller proportion of their lives, so in everything from their work patterns to their names and appearance, women have tended to become more like men.<sup>32</sup>

Despite some fine early work on the consequences of the demographic transition, especially for women's lives (e.g. see Collver, 1963), most contemporary population research addresses the issue of how aspects of women's status (e.g. their education or employment) can influence levels and trends of fertility (and child mortality). Yet such influences are probably secondary compared with how the demographic transition has inexorably altered the position of women in the world – a subject which, as Karen Mason (1997: 158, 173–174) rightly stated, is both poorly understood and barely researched. In the present context the point is that because fertility reduction is essentially a universal process, most women in all societies are eventually going to reduce their fertility irrespective of their socio-economic characteristics. So, again, one is tempted to remark that in focusing upon how women's status affects demographic outcomes, most researchers have completely missed the fundamental influence of 'gravity'.<sup>33</sup>

Several forces are at work. Mortality decline

benefits adult women much more than adult men. At older adult ages it produces a progressive feminisation of the population – an effect which is heightened in significance by the simultaneous occurrence of population ageing as a society moves through the later stages of the demographic transition. Mortality decline also means that, on average, women who marry face a long period of widowhood – which among other things raises the issue of their economic support.

However, the really key changes relate to fertility. In pre-transitional circumstances, with an average of five or six live births per woman per reproductive lifetime, the related facts of pregnancy, lactation and childcare dominate women's – much shorter – lives. In contrast, in a population that has passed through the demographic transition, roughly two (or fewer) live births per woman is the norm, and children occupy a much smaller fraction of women's much longer lives. Indeed, the likelihood is that after marriage women will spend a majority of their lives with no children at home, and for much of this time with no husband around either.

Davis and van den Oever (1982) have argued powerfully that the prime social structural adaptation to these major demographic changes has been a weakening of the institution of marriage in society. Particularly for women, but also for men, marriage in the sense of a formal lifetime commitment for the having and rearing of children becomes less important. So, as the transition works itself out, people are less likely to marry, and if they do so they marry at later ages and are more likely to separate before the death of one of the partners intervenes. Post-transition, women in particular have much more time, and greater incentives, to pursue non-family employment away from the household, and with low fertility their mobility is significantly increased too.

These trends and their inevitable consequences have been gradually unfolding in most Western societies for much of the twentieth century – although, of course, the actors themselves have been largely unaware of the ultimate forces at work. Now, quite predictably, in the most demographically advanced populations of Asia many younger women are



questioning whether parenthood and marriage have much to offer them. In places like South Korea, Thailand and Malaysia, young women are 'staying away from marriage in droves' (Jones, 1997: 74). Because the nature of the institution is rather different in sub-Saharan Africa, it is probable that the consequences of demographic change for marriage there may be somewhat different in detail. However, as elsewhere in the world, eventually there will surely be a reduction in gender differentiation because of the demographic transition, in particular the massive reduction in fertility.

For those countries for which it is available, Fig. 3(d) plots the UNDP gender empowerment measure against the stage reached in the demographic transition. The measure is designed to gauge the empowerment of women relative to men in economic and political spheres of activity. As can be seen, in general the more advanced a country is in the transition, the higher its level of gender equality. Notice that the effect seems to be strongest during the *later* stages of the transition. This is probably because it is the attainment of low fertility that is the most important causal process.<sup>34</sup> Relatedly, the fact that political voting rights have often been extended to women much later than to men probably reflects the basic reality that high fertility tends to lock women up within the domestic domain (Garrard *et al.*, 2000: 272).<sup>35</sup>

## DISCUSSION AND CONCLUSIONS

This paper's central argument has been that mortality decline causes both fertility decline and urbanisation. In turn, urbanisation leads inevitably to a more complex society, *inter alia* with greater occupational specialisation, greater reliance upon systems of exchange, and the growth of other institutions which provide a measure of integration and coordination. Urbanisation focuses attention on the distribution of political power in society, so helping to bring about the rise of modern democracy. Greater gender equality has arisen mainly because, now women are freed from repeated childbearing, there is now much less to differentiate women from men. It is probable too that population ageing and feminisation contribute to greater political and gender

equality. The theoretical rationale for this is simple: the more adults and women there are in society, the more their voice will come to be heard, eventually. In practice these various processes tend to overlap and interact: for example, political developments contributing to the gradual reform of gender systems.

In concluding, it is perhaps worth summarising what this paper has *not* tried to do, as well as what it has.

The paper has *not* argued much that is new. Nor can it possibly claim to have addressed all relevant issues. For example, there has been no discussion of the profound consequences for individual psychology (and educational investment) arising from dramatically improved survival chances. However, the paper has assembled and restated several important wider arguments, which – in a world where demography is arguably a subject in retreat – are in danger of being forgotten.

The paper has *not* argued that the demographic transition has been the sole engine of world development, however the latter may be defined. It would be absurd to deny the contributions of economic growth and technological change to virtually all of the developments examined here. Moreover, in reality there have been, and there still are, a host of synergistic interactions between demographic, social, economic, political and technological changes. Also, I have deliberately avoided much discussion of the origins and nature of the 'spark', which became a blaze during the eighteenth century, and from which everything else derives. The reader will surely realise too that the *seeds* of much that was to develop later – e.g. the existence of a few towns, and the *idea* of political equality – existed long before the transition's start.

The paper has *not* argued that all of the consequences of the demographic transition are necessarily beneficial. Clearly mortality decline is a 'good thing', and because I have been concerned to explore several major dimensions of 'development', the paper has tended to focus on processes that are usually regarded in a positive light. However, there are other consequences of the transition which might provoke doubt, for example, relating to some of the possible adverse social effects of urbanisation (such as increased loneliness and

new forms of pathological behaviour). Also, as Fig. 1 shows, the transition has probably contributed to the expansion of systems of governmental and administrative control, about which one can certainly have reservations. So, most certainly, the argument here has *not* been to claim that the more people there are, the better things will necessarily be.

The paper has deliberately *not* addressed the core debate mentioned at the start – namely the nature of the relationship between population growth and per capita income growth. However, it is fair to claim that mainstream demographic opinion has long suspected that poor countries with fast-growing populations would probably benefit economically from fertility decline (e.g. see Coale and Hoover, 1958). Also, this same body of opinion has generally maintained that, to the extent that mortality and fertility decline greatly enhance the stability, predictability and efficiency of the conditions of human life, they must benefit the economy in the long run (e.g. see Davis, 1945). It is noteworthy that after a lengthy period of agnosticism, and spurred by discovering a so-called ‘demographic bonus’ behind the East Asian ‘miracle’, mainstream economic opinion seems now to be taking a similar view of the issue (e.g. see Kelley and Schmidt, 1995; Bloom and Williamson, 1998).

On the other hand, the paper *has* put the demographic transition centre-stage in the process of development, where it surely belongs. Unfortunately, today there is still cause to echo Demeny’s (1972: 503) lament concerning the extraordinary degree of neglect of the ‘multifarious’ consequences of the demographic transition. The situation is not helped if so much of today’s thinking and research on population matters remains so narrowly technical and inward-looking.

The paper *has* argued that given the sustained mortality decline of the demographic transition, all of the other major developments addressed here may well have been inevitable, at least in the very long run. In fact the transition, and therefore these developments, happened first in Europe and then spread abroad. But, albeit with a different flavour, the same societal developments may well have occurred, eventually, if the demographic transition had originated in and spread from

elsewhere – for example, Japan. That is, it would have been sociologically unlikely for the transition to have happened without bringing urbanisation, increased societal complexity, democracy and greater equality between the sexes in train. And the transition has also contributed to other advances like the increase in social mobility and the rise of mass education. Today, many of these other developments are sweeping the world, sometimes rather ahead of the demographic transition itself.

The paper *has* also argued for a wider conception of development. Happily, in recent decades such a view has become increasingly common. Especially reduced mortality, but also access to modern contraception are surely integral to any modern definition of development. However, the main point of this paper has been to remind us of the demographic basis of fundamental societal structural changes – such as where people live, how complex their societies are, how people influence the larger decisions which any society must take, and how men and women stand in respect of each other. To reiterate, there are still times when these broader aspects of development, and especially their demographic underpinnings, are in danger of being overlooked.

Finally, the paper *has* argued that over the very long run several key dimensions of this broader vision of development have occurred, and therefore presumably in the future they can be expected to occur, due to the continuing demographic transition. Moreover, these developments can happen partly independently of any change in economic level. This is not to say that such future developments are guaranteed, nor that changes will always be steady or even unidirectional (history teaches they will not). Very much, the argument here has been forwarded ‘other things being equal’. That said, if the argument has force then it may be all the more important should some parts of humanity continue to find conventional economic growth very hard to attain. To say this is not to deny the desirability of raising living standards: on the contrary. However, not everything good derives from economic advance. There are other positive processes at work in the world, not least those of the demographic transition.

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## NOTES

- (1) However, see Porter (2000); Easterlin (1996: 15–29); Mokyr (1990).
- (2) The mistake is common partly because modern researchers focus on explaining cross-sectional differentials such as those found in DHS data-sets. However, fundamental scientific questions often require study of *homogenous* behaviour and groups; and they may also require examination of changes over very long periods of time.
- (3) Consequently the more immediate mechanisms usually studied in the context of fertility adjusting to mortality – such as ‘replacement’ or ‘insurance’ effects (e.g. see Preston, 1975; van de Kaa, 1996: 405–409) – are *irrelevant* to this discussion.
- (4) See also Davis (1963). On some of the social, economic and psychological mechanisms which might help to re-establish some rough measure of equilibrium, see, for example, Carey and Lopreato (1995) and Cleland (2001).
- (5) It is generally believed that the only other phenomenon in human experience that might possibly be termed a ‘demographic transition’ (that which occurred around the time of the Neolithic revolution) probably involved a rise in the birth rate as a lagged response to a rise in the death rate (see Coale, 1975). Although the context was obviously entirely different, it is plausible that changes in relative cohort size played a role in what was probably an extremely lengthy overall transition and slow adjustment process. An objection to the statement in the text might be that in some African countries the AIDS epidemic is both raising death rates and speeding the pace of fertility decline by strengthening the conjugal bond (e.g. see Caldwell *et al.*, 1989: 225). However, crude death rates in countries like Uganda and Malawi have not yet reached the levels which held in the early 1950s, nor are they generally projected to do so (see United Nations, 1998). More importantly, such an objection would confuse the relatively short and the very long run. Another objection might be that with future population ageing (e.g. in Europe and

- Japan), crude death rates will rise with no matching rise in the birth rate and therefore populations will decline. The extent to which birth rates may rise in such circumstances remains to be seen. However, the degree of ‘equilibrium’ which the present argument requires both before and after the transition is *rough*. Thus just as pre-transitional populations often experienced considerable population growth, so in the future post-transitional populations may experience considerable population decline. Finally, the present argument does not preclude the possibility that in certain circumstances (e.g. a runaway greenhouse effect) modern societies could experience demographic collapse. Throughout the argument is proposed ‘all other things being equal’.
- (6) The word ‘illustrate’ is important, because while the various figures used in this paper support the arguments, they can hardly be said to prove them. As with other ‘macro’ theories of development, the present arguments are very difficult to verify.
  - (7) Use of the crude death rate as a measure of progress through the transition would be inappropriate, since it may rise in the later stages of the transition with population ageing. The rate of natural increase has similar problems since it rises and then declines as the transition proceeds. Because, temporarily, replacement total fertility can coexist with a fairly high crude birth rate, I take the view that it is the latter *crude* measure which should really be used to gauge the completion of the demographic transition. Finally apropos Fig. 3, note that by historical standards even those few countries which have life expectancies of just over 40 years are actually quite well advanced in the demographic transition.
  - (8) Zelinsky’s well known paper (1971) on the ‘mobility transition’ draws parallels between it and the demographic transition, but the paper pays little attention to urbanisation and it does not analyse the links between these processes. The mobility transition is portrayed as largely technologically driven. Kirk’s review of demographic transition theory barely mentions migration (Kirk, 1996). But see Rogers (1977) for a rare attempt at integration.
  - (9) None of this precludes (i) fertility decline in rural areas and (ii) high urban fertility in pre-transitional circumstances when death rates are still high.
  - (10) See Williamson (1988) for a valuable overview of migration and urbanisation which gives greater weight to demographic processes.

- (11) This was true in much of Europe until the second half of the nineteenth century (e.g. see Hohenberg and Lees, 1985: 74–98) and in much of Asia until the 1940s (e.g. on South Asia see Dyson, 1997: 123–131). Note that, as a result, an initial negative feedback effect from urbanisation may be to slow the overall pace of mortality decline: England and Wales during the nineteenth century is a probable case in point (e.g. see Woods, 2000: 360–80).
- (12) See also Keyfitz (1980) and Rogers (1977).
- (13) For convenience this discussion ignores age structural effects consequent upon net rural to urban migration, although they sometimes reinforce the other effects mentioned.
- (14) The assumption being that the volume of rural out-migration varies directly with the size of the rural population. Of course, in particular locations there may be 'slack' in the rural economy which delays the increase in rural out-migration.
- (15) Preston (1994: 4) noted perceptively that 'When labour requirements in food production are relaxed, people exhibit a preference for a much higher degree of concentration than when agriculture is the dominant activity'.
- (16) The present argument implies that in parts of sub-Saharan Africa the interruption of mortality decline by AIDS will slow the pace of urbanisation.
- (17) The data sources used in Fig. 3(a) put China's urbanisation in 1995 at 30%, which is certainly below the level expected on the basis of its life expectation (68.5 years). However, other estimates put the country's urban level very much higher; see, for example, Guldin (1992: 229). Sri Lanka, Thailand and Vietnam are countries in Fig. 3(a) which, like China, have managed to reduce death rates very rapidly and partly as a consequence have lower than expected levels of urbanisation.
- (18) In reality the necessary rural products extend well beyond food. In many locations, supplies of energy are crucial. For simplicity the discussion here focuses on food, and for the same reason I largely ignore the important synergistic interactions between urbanisation, agricultural productivity increases and overall economic growth.
- (19) Studies tend to find that levels of per capita calorie intake are lower in urban than in rural areas of the developing world (see FAO, 1987: 30). In much of Asia and Latin America, obesity is rapidly replacing under-nutrition as the most important urban nutritional problem.
- (20) Interestingly, Lipset (1963: 34) refers to Max Weber's analysis of the rise of modern 'citizenship' and its relationship to urbanisation. More generally, centres of power which could challenge traditional autocracies have usually emerged first in towns.
- (21) One consequence of this was that voting rights were often extended to townspeople before being extended to rural dwellers; the British Reform Acts of 1867 and 1884 illustrate this point (see Goldblatt, 1997: 50). To see that the pressure for democracy both in Europe and elsewhere has come almost entirely from urban populations, see, for example, the contributions to Potter *et al.* (1997).
- (22) Before 1965 Afro-Americans were often prevented from voting in much of the southern US through a variety of tax and literacy restrictions. Although they approached it earlier in the twentieth century, Greece, Portugal and Spain attained their present status as modern democracies in 1975, 1976 and 1978 respectively. Most countries in eastern Europe have come to democracy later still, and, of course, a few are not yet there.
- (23) Interestingly, the vocabulary used by political scientists to describe autocratic/oligarchic systems can be similar to that used to characterise young population age distributions. Thus Laski (1937: 81) describes oligarchy as 'a pyramid in which the central assembly accretes all power to itself.'
- (24) Technological developments like remote electronic voting may influence this situation in the future.
- (25) Wilson (2000: 1) notes astutely that 'Democracy ... has often accompanied population ageing'.
- (26) The urbanisation estimates since 1800 used for 'Europe' and Asia are those of Grauman (1977). The estimate of urbanisation in Latin America in 1925 used in Fig. 4 draws on figures in Gilbert (1982) and has been adjusted to be comparable with the United Nations statistics from 1950 onwards; see also Davis and Casis (1946). I have been unable to locate earlier urbanisation estimates for Latin America, so for 1800 it has been taken as 6% (similar to other regions) and arbitrary intermediate figures assumed for 1850 and 1900. For a treatment of long-run democracy trends which quite reasonably classes the US and Canada as part of 'Europe', see Gurr *et al.* (1991). However, the exclusion of the US and Canada has little influence on Fig. 4. The precise basis and nature of the Polity 3 democracy scores need

not concern us; they have been used because they are available for long periods of time.

- (27) The average Polity 3 based regional democracy scores plotted in Fig. 4 relate to 1800, 1850, 1900, 1925, 1950, 1975, 1985 and 1995 (strictly 1994). To make them comparable with the urbanisation percentages they have been multiplied by ten. The number of countries available to generate these unweighted averages varies over time as follows: Europe (12,25,22,29,27,25,28,40); Asia (8,8,8,11,25,35,34,33); Latin America – the Polity 3 data start from 1850 (18,18,19,20,23,22,23); Africa – even by 1950 only five countries are scored, so the first regional average shown in Fig. 4 relates to 1975 (45,44,43).
- (28) The reason for this is that while the urbanisation levels shown in Fig. 4 pertain to the whole of Europe (including Turkey and the USSR), the relatively high democracy scores for the period 1850–1925 disproportionately reflect the influence of France, Belgium, the Netherlands and the UK, which were well above average in terms of urbanisation.
- (29) Data on the age distribution of three of these populations are available for both 1900 and 1925 (United Nations, 1956). The proportion aged fifteen and above rose from 67.5% to 72.9% in Sweden, 68.3% to 76.0% in Belgium, and 67.5% to 74.0% in the UK.
- (30) Afghanistan, China, Iran, Japan, Korea, Nepal, Oman and Thailand. Most of the region's in fact very low level of 'democracy' at this time results from Korea which is scored at 5 in 1800, 1850 and 1900.
- (31) United Nations data for Latin America indicate little change in the proportion of the population aged fifteen and above over the period 1950–75. However, this proportion rose from 58.7% to 65.7% between 1975 and 1995. See United Nations (1991, 1998).
- (32) It is important to stress that reduced gender differentiation is asymmetrical between the sexes. Thus discussing trends in the use of androgynous names in the US, Lieberman *et al.* (2000: 1285) remarked correctly that it is usually women 'who adopt tastes initially associated with males rather than vice versa'.
- (33) It has been missed for precisely the same kinds of reasons referred to elsewhere; for example, the predominance of survey analysis and the relative neglect of the very long-run (see note 2).
- (34) Indeed, if as has been plausibly suggested (Lloyd, 1994: 194–7) circumstances in which there are large numbers of siblings in a family

tend to reinforce gender differentiation, then until the later stages of the demographic transition, increased child survivorship and perhaps rising fertility may operate to heighten gender differentiation between siblings, and constrain rather than augment women's independence. See also the notes to Fig. 3.

- (35) Interestingly, votes for women in national elections were introduced first in New Zealand (1893) and then Australia (1902), which were both countries with relatively masculine populations (sex ratios (m/f) of 1.13 and 1.10 respectively (see Mitchell, 1983: 53) around the time). In the US also, 'pioneer' populations with relatively few women – Wyoming (1869), Utah (1870), Colorado (1893) and Idaho (1896) – led the way. It has been hypothesised that such societies were relatively early in extending the franchise because (i) women were seen as less of a threat, and (ii) the extension might help to attract more women with their presumed 'civilising' influence (see Markoff, 1996: 123). However, an alternative explanation which is more compatible with the present argument is that the introduction of *any* innovation was easier in settings where, effectively, completely new institutional structures were being established.

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