

Published as:

MacInnes, J., Pérez Díaz, J. (2006), "'Low' Fertility and Population Replacement in Scotland" *Populations, Spaces & Places* 13 (1): 3-21.

This is the First Version (Paper submitted to *Populations, Spaces & Places* in 2006).

Please, for citations use the published paper. Online Version in

<http://www3.interscience.wiley.com/journal/114028532/abstract>

‘Low’ Fertility and Population Replacement in Scotland.

John MacInnes & Julio Pérez Díaz

Abstract

It has been argued that Scotland faces population ageing and decline that will have potentially serious economic and social consequences, and that the origin of these process lie in its low and declining fertility rates. This paper argues that low fertility is not the problem it is purported to be, and that pro-natalism is both undesirable and unnecessary. It suggests that low fertility and population ageing are positive developments, and that what is distinctive about Scotland is not any shortage of births but an excess of early deaths.

‘Low’ Fertility and Population Replacement in Scotland.

‘The future never resembles the past’ (Keynes 1937:13)

1 Introduction

Perhaps because of its surprisingly intimate relationship with state power and international relations, the study of fertility has been more prone than most to alarms and excursions. In a recent article on population projections, Wilson and Rees (2003) argue that Scotland’s ‘most pressing demographic problem’ is ‘a rapidly ageing population due to a low and declining fertility rate... Scotland’s population will fail to become demographically sustainable unless current low fertility rises. The severity of the consequences of the current demographic trajectory on which Scotland is traveling do not seem to be fully appreciated in the UK demographic literature and in public debate.’ Since only fertility, rather than migration, will affect the future age-structure, ‘A large-scale pro-natalist initiative in Scotland should be given very serious consideration’ in order to avoid serious consequences for the Scottish economy ‘what Scotland really needs is a pro-natalist policy’. Their analysis is similar to that of Graham and Boyle (2003) and part of a much wider trend in the contemporary analysis of European population trends that identifies population ageing and decline as impending problems and low fertility as the culprit (see, e.g. Castles 2003, Chesnais 1998, Goldstein et al 2003, Grant et al 2004, Lesthaeghe 2001, Lutz et al 2003, Neyer 2003, Sleenbos 2003). This article argues that this increasingly noisy consensus, very audible in the debate over pensions reform for example, is mistaken. As Graham and Boyle (2003) note, there has been little research specifically on Scotland, so that in what follows I also refer to relevant material from a UK and European context.

Contemporary demography is a good example of the difficulty social science often has, paradoxically, in digesting the implications of its own analyses of social change. Trapped in the mentality of the past it addresses yesterday’s issues. In demography this reveals itself in two rather anachronistic assumptions: (1) that the maintenance (if not growth) of existing population levels is desirable and (2) that ‘below-replacement’ levels of fertility must be caused by some ‘blockage’, whether social, economic or psychological, that prevents those who would really prefer to have more children realizing their desires. These assumptions reach across the political spectrum; from those who blame the atrophy of traditional morality and the family (Fukuyama 1999), to those who see the further collectivization of the costs of parenting as the solution (McDonald 2005). These two assumptions are also conservative. Like those that associate de-industrialisation, or a fall in the proportion of the workforce in agriculture with economic ‘decline’, they fail to realize that society has passed the historical stage where the struggle for population is a vital (MacInnes & Pérez 2005).

This article suggests that analyses of low fertility pay insufficient attention both to empirical history (we have been here, or somewhere like it, before) and to demographic theory. Population reproduction is about more than fertility (Henry 1965). The social determinants and consequences of fertility have changed and, unlike persons, populations never have and do not now ‘age’ (Pérez 2004). In the 1930s, as

the effects of what came to be known as the demographic transition became clearer, there was much discussion of low fertility rates, not only because they were imagined to presage population decline, but because low fertility disproportionately affected the 'better classes' and thus the quality of countries 'racial stock' (Teitelbaum and Winter 1985). Such fears motivated rather impressive social scientific advances in such areas as statistics and data collection through censuses and surveys (Szreter 1984, Soloway 1990). Ironically, most of this research was driven by eugenic and racist ideas about the inheritance of innate ability and the racial character of populations that only fell into disgrace when the full horror of the Holocaust became apparent. With hindsight it can be clearly seen that the conclusions drawn from this research owed more to the anxieties of its authors, persuaded of the perils or evils of low fertility, than dispassionate consideration of the data.

Insofar as this research attempted demographic predictions it was usually wildly wrong. For example Warren Thompson, a key early theorist of the demographic transition, forecast that the population of Europe had probably reached its peak and was set to decline (Thompson 1929). It has since trebled. Contraception and 'family limitation' were held responsible for all manner of moral and medical decay and decline of patriotic responsibility. Such arguments may nowadays be confined to the wilder shores of some nevertheless powerful religious institutions (the beliefs and behaviour of believers is another matter) but their intellectual descendents are to be found in the increasingly popular idea that a collective interest in population replacement, the future fiscal sustainability of the state and manageable ratios between those of working age and the 'dependent' old require the state to encourage higher fertility through the further socialization of the costs of rearing children. Just as eugenic ideas found support across the political spectrum, so today does the idea that sustaining fertility is a social good.

This article suggests that it is far too early to conclude that either Scotland, or Europe, faces substantial population decline. Actual population decline started in Scotland a generation ago, with relatively little comment or concern. Should such decline continue it is not obviously bad. What is popularly called 'population ageing', with its attendant imagery of social sclerosis and decay, concerns changes in the age structure of the population that have been underway for a century. Such changes neither automatically worsen dependency ratios nor threaten the economy. If Scotland has a 'pressing demographic problem' that distinguishes it from either the rest of the UK or Europe it is not low fertility but *high mortality* - Scotland needs *more* 'population ageing' not less. I shall conclude that Scotland does not need no pro-natalist policy, which is just as well, since the evidence shows them to be Canute like in their effectiveness. They are solutions that will not work to a problem that does not exist.

2 Empirical evidence about current fertility rates and plans in Scotland

Table 1 shows births in Scotland in since 1946. The total period fertility rate (TFR) for Scotland in 2004 was 1.60 (its lowest ever level was 1.48, in 2002). The experience of Scotland, where the TFR has halved from its peak in 1964, is similar to other European countries. There are two factors behind this development. The first is the long term 'demographic transition' to lower fertility and mortality rates which has accompanied economic development and the rise of 'modern' society. No industrialized country (including the US) has a TFR above replacement level (conventionally taken as 2.1) and the estimated TFR for the entire developing world

declined to 3.1 in 2002. The second is the aftermath of the post-War ‘baby boom’ during which most Western countries experienced levels of nuptiality, low age at first birth and low voluntary infertility that were unprecedented and unlikely ever to return. The drift to lower fertility rates thus resumes a longer trend first visible in the 1930s and subject to much comment at the time.

Scotland might stand out from other countries if fertility decline continued at its pre-2002 rate while rates stabilized elsewhere (see Figure 1), but given the unpredictable character of short term fluctuations in TFR, visible in Figure 1, there is no evidence yet of any such distinction emerging. To assume that a continued or accelerated decline in rates will occur (e.g. Wilson and Rees 2003) seems unwarranted, as does Graham and Boyle’s classification of Scotland as a country with ‘very low fertility’ on the strength of its TFR dipping below 1.5 for a single year. The Scottish TFR remains well above the EU average, it is substantially higher than rates experienced by the ‘lowest low’ fertility countries of Spain, Italy, Germany and Greece, but below rates enjoyed by the Scandinavian countries and France.

All measures of fertility have advantages and disadvantages. TFR is rather sensitive to changes in the timing of childbirth across the life course since it is a transversal measure of longitudinal behaviour (Boongarts & Feeney 1998). Since an important contemporary change is rise in age at first birth (sometimes referred to as ‘postponement’) combined with increasing fertility at later ages (sometimes referred to as ‘recuperation’) TFR overestimates fertility falls by failing to ‘measure’ recuperation – since such recuperation may or may not take place. Conversely, as ‘recuperation’ kicks in, the TFR may rise faster than the underlying increase in fertility: a plausible interpretation of Scotland’s TFR performance in 2003 and 2004. An alternative, more accurate, measure is the completed fertility rate (CFR). This has the substantial drawback that it can only be calculated on a retrospective basis once a cohort of women has reached the end of their fertile period (conventionally 45 years). Figure 2 shows this measure to be much less volatile than the TFR. It peaked at 2.63 in 1978 (compared to a peak of 3.09 for TFR in 1964) and currently stands at 1.90. CFR for the EU was 1.70 for the female cohort born in 1963. In this sense Scotland has relatively high fertility.

These falls in realized fertility have been accompanied by much smaller falls in ‘desired’ family size (Goldstein et al 2003), which continues to be around two in Europe, so that Chesnais (1998) argues that this gap represents a ‘latent demand for family support’ comparable to that which earlier existed for reliable contraception. To my knowledge there is no data on ‘ideal’ number of children available for Scotland, however the quality of such survey data is, to say the least, debatable. Most people are rather vague about their fertility intentions (Hobcraft 2004, Irwin 2000) and there is little evidence of any robust link between intention and result over any but the very short term (MacInnes 2004). Potential parents are usually asked how many children they would prefer to have. To take this as a measure of the actual ‘demand’ for children is rather like asking respondents how much they would like to earn, what size of house they would prefer, or what make of car they would like to drive. People reveal their preferences in their behaviour: choosing, within the constraints that face them, between devoting time and resources to study, leisure, employment, domestic tasks and inter alia, having children. The General Household Survey does ask women under fifty about their fertility history and asks whether ‘you think that you will have any (more) children’ and ‘[h]ow many children do you think you will have born to

you in all including those you already have had already.’ This question wording has the considerable merit of pointing respondents towards practical results rather than ideal preferences, but detailed analysis of results from England and Wales suggest that it still leads respondents to over-estimate their eventual fertility (Smallwood and Jeffries 2003) and Simons (1978) argues that respondents still answer such question wording with reference to norms about acceptable family sizes rather than their own preferences and situation. Using this measure, women under 50 in Scotland in 2003/4 who gave definite answers to the question (i.e. excluding don’t know’s) estimated their eventual completed fertility at just under 1.9¹.

3 Possible Causes of long term low fertility

As Wilson and Rees note, there is no consensus about the likely future trend of fertility rates in advanced industrial societies, nor agreement about the causes of their decline or what variables might best explain temporal or spatial variation; although no-one expects any general return to ‘replacement’ levels of fertility in the foreseeable future (;Caldwell 1982; Coale 1986; Van de Kaa 1987; Mason 1997; Chesnais 1998; Lesthaeghe and Willems 1999; Frejka and Calot 2001; Frejka and Ross 2001; Lesthaeghe 2001; McDonald 2001; Caldwell and Shindlmayr 2003; Demeny 2003). Research has begun relatively recently; data sources that link demographic behaviour to social or economic status or social attitudes are sparse, and aggravated by the need to concentrate analysis on comparatively brief periods in the life course of men and women, so that conventional survey samples often prove too small for accurate analysis. The limited number of ‘cases’ (countries) makes comparative macro analysis an imprecise tool as well as a theoretical minefield. It is easy to mis-use transversal comparisons across countries at a given point in time to produce over-optimistic conclusions about the future course of fertility within countries over time. Thus analyses that use such cross country comparisons to reveal a ‘reversal’ in the relationship between women’s employment and fertility over recent years (e.g. Castles 2003) confuse social change with a compositional effect caused by the later fall in fertility in Southern European countries with lower female participation rates. Finally some issues (such as the evolution of desired and completed family size over time) require longitudinal research that yields results only in the future, or is forced to rely on respondent recall with its associated biases. However there are five factors that shape contemporary discussion.

3.1 Timing

Part of the fertility fall is associated with childbirth *timing*: the rise in age at first birth. This is associated in turn with higher age at partnership formation, although the increase in cohabitation and associated changes in forms of partnership make this more difficult to measure. Timing is often discussed in terms of ‘postponement’, but this rather misleadingly implies a former ‘normal’ age for first births. A second element is the decline of higher parities (i.e. large families) in part because of fall in the time period between first birth and age-based decline in fertility for women. Timing is related to changes in gender relations, the labour market and ‘marriage market’:

(1) An increase in alternatives to motherhood for women, (more equal opportunities in education and employment).

- (2) A slower change in the amount of men's involvement in unpaid domestic labour including childcare.
- (3) A perception of increasing absolute and relative costs of children (see below).
- (4) Trend rises in skill and qualification levels in employment with associated rises in education and training times and time spent 'establishing' a career.
- (5) Increase in the age of emancipation of young people from the parental home.

Actual or potential parents (in the sense of people with some desire for children) may require longer periods than in the past to establish the (rising) standard of living thought necessary to form a family. They may also be more demanding about their choice of partner. However the definition of such 'economic conditions' is highly variable, and may well be inversely related to potential parents' affluence, i.e. those with low incomes or other dimensions of economic insecurity may nevertheless have higher fertility rates. Research on voluntary childlessness based on Eurobarometer and FFS surveys (MacInnes 2004) suggests that a relatively small proportion of those without children consciously planned to have none from an early age. More important is 'postponement': the decision not to have a child in the immediate future which gradually, and not necessarily accompanied by any explicit recognition, becomes the postponement of childbearing beyond the end of a respondent's fertile years. Such research also suggests that 'work-life balance' or other economic issues (income, housing) rarely feature in respondents' accounts of voluntary childlessness or restriction of family size. More important is civil status (though this tells us nothing about the direction of cause and effect) and problems in a partnership. This directly contradicts other social attitude survey evidence, however, in which respondents overwhelmingly attribute falls in family size in general (as opposed to their own personal experience) to 'economic reasons'. Timing raises the relevance of public knowledge of the relationship between women's age and fertility. While public knowledge of contraception may be good, knowledge about the rate at which women's fertility declines with age may be less developed so that postponement may sometimes inadvertently become involuntary childlessness (Toulemon 1996).

3.2 Changes in Gender Relations

To the extent that women have increased alternatives to motherhood we might expect fertility to decline. In addition values of gender equality are intimately linked to those of individual self realization (Giddens 1991, 1992) that might both reduce the desire for children and increase their perceived costs, insofar as they are now seen as individuals who must be endowed with the capacity to direct their own self reflexive life-projects in the future. In the longer term this might be seen as part of the move away from patriarchal societies with strong household economies in which the benefits of fertility largely accrued to men while the costs were born by women. Rises in separation and divorce rates, since they increase the risk of family breakdown, may depress fertility rates. Only longitudinal evidence can identify the linkages between marriage, cohabitation and fertility, since the shift between these statuses often anticipates fertility decisions, or results *from* them, rather than simply being antecedent causal factors. It may be relevant that the countries in Europe with the lowest low fertility rates all have strong institutional patriarchal traditions, and McDonald, amongst others has suggested that these now act as a brake on fertility. However, drawing such a conclusion depends upon making the conceptual leap from transversal evidence to longitudinal conclusions that we criticized above.

3.3 The costs of children

Opinion poll evidence shows that when asked in general terms (as opposed to their own behaviour), overwhelming majorities of respondents cite the increasing cost of children as the main reason for falling fertility. Most demographic literature agrees with the qualification that increasing opportunity costs are emphasised, particularly for mothers with labour market careers, rather than direct costs. It is frequently argued (e.g. Becker 1991) that any savings flowing from the reduced number of children has been offset by an increase in their 'quality': more per capita time and money investment has increased the cost of children. Work-life balance studies have suggested that it is more difficult to coordinate parenting with employment in an increasingly mobile society, and some studies have suggested that parents devote increasing amounts of time to children. This evidence of the increasing cost of children is put alongside evidence of unfulfilled or latent demand for children to conclude that low fertility is a function of the increasing cost of children, so that greater state support and re-distribution of these costs could raise fertility.

Such arguments are not new. Alva Myrdal (1968 [1939]) put the case eloquently and comprehensively sixty years ago, and her arguments formed the basis of the Scandinavian model of the welfare state. Unlike many of her contemporaries she realized that gender inequality was unsustainable in the long run in the labour market, and therefore also in parenting. Changes in the nature of employment, the family and the state were therefore needed. The second thing to note is that it is unlikely that the direct costs of having a child have risen in real terms over the course of the twentieth century. States have absorbed a rising proportion of the costs of children through tax breaks, child benefits, subsidized maternal or parental leave or other income transfers, and the provision of services, such as nurseries, education and health care. Technological innovation has cheapened almost all the goods consumed in the course of parenting, reduced the amount of time input necessary (e.g. disposable nappies, prepared foods, automatic washing machines) and created new technological possibilities (the early morning video; baby alarms).

Childcare supervision is a highly unusual but important example of a 'technologically non progressive activity' (Baumol 1967). Its relative (but not absolute) cost therefore rises in proportion to the general level of technological innovation. Furthermore, almost uniquely in modern society, it is a status-specific physically non-alienable activity. That is the identity of the person doing it is paramount (a child would suffer if it did not know, from one day to the next who was caring for it, regardless of the level of competency and expertise of the carer) and their physical presence is important. While this explains the very severe limits to any 'industrialisation of the family', it is also important because of its links to the economics of time (Becker 1965, Linder 1970). As the cost of time increases with the general economic prosperity, the opportunity cost of parental childcare increases, as well as itself becoming more 'cumbersome' (Myrdal 1968 [1939]) in a social and economic context that prioritises flexibility and mobility.

However, any such rise in children's opportunity cost, principally due to the rising value of time in a society with a widening range of productive and consumption activities, is simply part of the general rise in the opportunity cost of any time consuming activity that occurs as the result of such economic progress (Becker 1965,

Linder 1970). It cannot, of its own, explain any general decline in fertility, since the opportunity cost of other activities, in terms of children 'foregone' in order to undertake them, must also have risen. What rising opportunity costs tell us is that potential parents in affluent societies have other priorities than devoting large amounts of their increasing resources and higher living standards to producing more children. Given that children are usually seen as an end in themselves, and human life is not seen as something that ought routinely to be accounted for in monetary terms, it is socially more acceptable to represent such choices between alternative opportunities as 'the rising cost of children'.

3.4 Changes in social attitudes and values

Changes in social attitudes are argued to have undermined the 'traditional' family, and some of its elements such as marriage or the authority of the husband. It may also be the case that an increasing consciousness of risk and social change predispose individuals against long term (e.g. marriage) or irreversible (e.g. parenthood) commitments. However any such transformation of intimacy (Giddens 1992) or increase in individualization or move to 'post-materialist values' (Van de Kaa 1997, Inglehart 1997) is occurring against high and rising levels of support *in principle* for the family as an institution, the importance of partnership and desirability of children, at least as measured by social attitude survey data. Although substantial attention has been paid to values, it is equally plausible to regard them as the result of demographic change, rather than its cause.

3.5 Work-life balance, the reconciliation of work and family life and family friendliness.

Policy and research attention has been paid to 'work-life balance' policies for obvious reasons, but any robust connection between the latter and fertility rates (as opposed to female employment rates) has proved elusive (OECD 2001, Sleebos 2003). Within Britain, there is a relation, although not strong, between presence of children, time stress and subjective perception of work-life imbalance. But there is also no relation between presence of children and demand for reduced working hours. Respondents give a rather positive evaluation of employers' sensitivity to childcare commitments (possibly due to rather low expectations) and the results cast doubt on any ability to characterize respondents as primarily committed to employment or to the family (MacInnes, 2005).

A key, but largely unnoticed development, is that in Britain, as in other countries, the employment rate for mothers has increased more slowly than the decrease in the percentage of women of working age who are mothers (what might be thought of as the parenting rate of workers) so that the proportion of the workforce who are mothers of dependent children has fallen slightly, while the proportion of the male workforce who are fathers of dependent children has fallen from around one half to one third over the last thirty years. The bargaining weight of parents within the workforce may therefore have declined. Demand for work-life balance policies may come from older workers, with less outgoings and family commitments, who prefer to substitute income for leisure.

4 Do children cost more?

If we review these elements of the debate, a common theme emerges that demographers, economists and sociologists have perhaps been slow to grasp. Most potential parents, especially mothers, now face a much greater range of life opportunities, and have the educational and other resources to pursue them, while they also enjoy far greater freedom in their reproductive and non-reproductive sexual behaviour. Can we seriously suppose that a family in a welfare state, with universal education, a public health system, a commitment to various forms of employment protection for women who become pregnant and for others, and a standard of living that equips most households with a wide range of time-saving consumer durables, faces greater difficulties in realizing a desire to have children than, say, its nineteenth or eighteenth century equivalent, let alone its predecessors of the 'baby boom' years? For example, in the Britain of the early 1950s, when the boom commenced, fewer than a half of all households had a washing machine, an electric cooker, a fridge, or electric water heater.

Merely to pose the question in these terms is to realize how profound the change in the social relations of fertility has been. Today, in Europe, having a child is a matter of private, largely un-coerced choice, albeit one that brings with it (like most 'free' decisions) a range of costs and risks, some of which are more foreseeable than others. It is easy to forget how recent the historical shift has been, not only to the ability to personally plan fertility reliably and cheaply, but to the idea that it is something than might be personally planned at all. Until well into the last century church, state, patriarchal interest and social norms encouraged women to 'be fruitful and multiply' and sexual behaviour was subject to strict legal sanction that is only now disappearing. However, though they sometimes might wish to try, neither church nor state can easily re-enter the bedroom once it has been defined as a private rather than public space.

5 Is fertility management possible in a democratic society?

Even if we assumed, for the sake of argument, that higher fertility rates were desirable, we would still have to show that they could be achieved. There is little robust evidence of pro-natalist policies successfully raising fertility rates, and plenty examples of failure, or contradictory policy instruments. For example at the same time as Franco's Spain sought to boost fertility by restricting mother's employment, Mussolini's Italy pursued the same aim by promoting it. The Scandinavian or French states might be taken as an example of the ability to sustain fertility rates over the longer term. However, any attempt to identify a causal link between state policy and fertility change faces a mass of prior and intervening variables to contend with. We might plausibly expect measures such as substantial state expenditure on public pre-school childcare, public education and health systems, regulation and subsidy for maternity and parental leaves at replacement earnings, benefits or tax breaks for those with children to alter the relative cost of children and thus promote fertility. If such a clear link existed, we would surely have found it long ago. Consider the cases of Portugal or the USA. Neither country offers much support to parents. Consider too France and Sweden: countries with very different social policies but which have nevertheless been inspired by a desire to sustain fertility. Figure 3 shows that it is far from clear that the fertility 'performance' of Sweden and France has been superior to Portugal and the USA. There is also controversy over the extent to which such state

involvement may prove self-defeating in the very long term. Some commentators relate the recent volatility in Swedish fertility rates (visible in Figure 1) to their increased sensitivity to changes in state support.

Consider next those countries, aside from France, that McDonald (2005) claims to have had some success in raising fertility: Hungary (in the 1960s), and the German Democratic Republic (1970s). Presumably modestly forbade mention of Rumania. Facing a TFR of 1.80 in 1966, government measures achieved no less than double that rate one year later (according to official statistics). Fertility then declined steadily till the mid 1980s at which point another pro-natalist initiative was introduced which proved ineffective. How was such change possible? Until the 1960s abortion was in practice, a widely used method of contraception. It was banned without warning in November 1966. Access was restricted to other forms of contraception and to divorce. Tax, maternity, housing and retirement benefits were offered for those having children. In the ensuing chaos, infant and maternal mortality rose, in part because the sudden baby boom had as one of its (predictable) results a large increase in the proportion of obstetricians on maternity leave. The 1984 pro-natalist initiative, which bore little fruit, once again restricted abortion while publicity campaigns promoted having children as 'a high honour and a patriotic duty' (Teitelbaum and Winter 1985, 100-102).

One conclusion that might be drawn from all this is that natalist policies ultimately depend on two approaches. One is direct state control of reproductive behaviour. There is little doubt that this is effective. One only has to look at the world prior to the demographic transition, and the near universal patriarchal control of sexual behaviour by church and state to see that this could indeed deliver high fertility at the considerable price of the tight regulation of women's (and to a lesser extent men's) behaviour. This is not a world we should aspire to re-create. The other approach is to modify the resource context in which people make decisions about children so as to make more and earlier births a more attractive option for potential parents. The success of this approach in turn depends upon the existence of significant blocks to higher fertility in the form of time or resource constraints. It is not surprising therefore, that a wealth of social demographic literature and enquiry has proceeded on the popular assumption that the relative direct or opportunity costs of children have risen in contemporary Europe. Were this the case, we might expect government intervention to further socialize the costs of parenting to be costly but ultimately effective.

However, an alternative, and perhaps more plausible explanation is that fertility decline represents less the increasing cost of children than a declining 'demand' for them. In contemporary society fertility can and does fall, because people can now afford not to have children, while far fewer children are actually necessary to reproduce population. They have other priorities for themselves, as well as higher aspirations for those children that they do decide to have. This liberation from the heavy burden and (for women) risky nature of reproductive labour was a fundamental and revolutionary achievement of the twentieth century for much of the world, based on unprecedented falls in mortality (Pérez Diaz 2004). We should not let assumptions about fertility rates forged prior to this revolution continue to shape policy after it has occurred, and instead take full advantage of the positive social changes this democratization of longevity has bequeathed us.

6 Possible consequences of long-term low fertility.

Long-term low fertility, along with continued decreases in mortality, raises the twin spectres of population decline and changes in the age structure of the population. The latter increases the support ratio of the number of people of economically active age (conventionally 15 - 64) compared to the 'dependent' elderly of 65+ years (although it *reduces* the support ratio for the dependent young). Both these consequences have often produced unduly alarmist reactions, both in contemporary political debate, and in the 1930s when the shift to lower fertility rates first became apparent (Spengler 1926, Davis 1937, Teitelbaum and Winter 1985). However there are three important points to bear in mind.

First, the bulk of population ageing has, in fact, already occurred. As shown in Figure 4, the proportion of the population aged over 64 in Scotland roughly trebled across the twentieth century (from 5.4% in 1911 to 15.2% in 2000), and on current GAD projections, might double across the twenty-first. On Wilson and Rees's most 'pessimistic' scenario the over 64's might represent 38.5% of Scotland's population in 2101. Raising fertility rates now, were that possible, would have much less impact on this process than Wilson and Rees's discussion might lead us to expect. On their own figures a reduction of six percentage points in the population over 64 would be matched by a similar increase in the population under nineteen. The main force driving changes in dependency ratios is the long-term impact of the demographic transition itself. This transition has reduced the proportion of young people (defined here as those under 15) in the Scottish population across the twentieth century from a third to a little over a sixth. As a result the overall support ratio (expressed as the ratio of those aged 15 to 64 to the rest of the population) has actually been improving slightly, as has the ratio of those in employment to all others (Figure 5).

However, does it make any sense to use age to calculate 'dependency'. This may have had some logic when most workers were men, most entered the labour force at 16, left it at 65 and worked full-time. It makes none at all when employment rates are driven by other factors. Working hours are continually dropping, so that increasing numbers of people enjoy shorter working weeks, longer and more frequent holidays and shorter careers. Workers stay in education longer, enter employment later and retire earlier: few remain active in their 60s (OECD 2004). Globalisation has not slowed this long-term trend. Women's employment rates in Europe have almost doubled as a proportion of men's over the last forty years (MacInnes 2006). Age structures capture none of these trends, which have been made possible by the same continuous increase in labour productivity that has driven up the value and opportunity cost of time. They also ignore what might be thought of as the social construction of age (Pérez Diaz 2003; Laslett 1991).

Most 'dependent' over 64's are in good health. The Rolling Stones may qualify for bus passes but this does not stop them touring. Their peers provide less visible but large and increasing amounts of time, resources and money to younger, employed, family members. Grandparents do more childcare. Increases in life expectancy have increased the proportion of dependent children with surviving grandparents and other older relatives who are healthy enough to take an active part in their care. The UK Millenium Cohort Study of babies born in 2000 (Centre for Longitudinal Studies 2004) was undertaken when they were aged around nine months. Sixty per cent of

these infants had all four grandparents alive when they were born. These grandparents were the single most important source of childcare after parents themselves. Two thirds of parents relied on them most for childcare outside of work hours, while one third used them as their main childcarers while they were at work². Any trend decline in 'real' as opposed to age based support ratios, could surely easily be covered by productivity increase. There is one qualification to bear in mind. Increased longevity may not be fully matched by increased health expectancy, so that a greater proportion of older people may require greater expenditure on health care.

Finally, 'population ageing' is not really a concept but a (misleading) metaphor. Populations do not age, individuals do. Individuals die. Populations do so only when, species become extinct. It is empirically false to assert that a shift in the demographic weight of a population to older age categories is equivalent to the life course ageing of an individual. The phrase has a different origin. Rarely is the issue of supporting the growing volume of ageing dependents presented as a family issue, since people may see the longevity of their own parents or grandparents as a matter for celebration rather than concern. Rather the issue is framed in terms of the fiscal sustainability of the welfare state. Since it is easy to imply that an increase in the proportion of the elderly must mean an increase in the volume of state support to this group, 'population ageing' arguments are frequently used to imply that in the face of this new demographic challenge, the welfare state must cut its cloth to suit its shrinking capacities. However it may well be that the reverse is true. Increased life expectancy will create more complex issues of intergenerational transfers of resources. Only two institutions can undertake such transfer: the family and the state, and only the latter can do so in a way that does not increase social inequality.

7 Scotland's demographic problem: not enough old people?

Like many demographic analyses that erroneously reduce reproduction to fertility, Wilson and Rees ignore mortality, even though they assume its continued improvement in their projections (in my view correctly). However, surely most divergence of Scottish demography trends from the rest of Britain is due to the inability of some parts of Scotland to achieve what we might call 'lowest low' mortality typical of the rest of Europe. This brings us to another key theoretical problem in the approach of Wilson and Rees, and many other analyses of low fertility: which is to see 'population ageing' as a result, when it might just as well be theorised as the ultimate *cause* of low fertility. In Scotland, life expectancy at birth rose by twenty years in the first half of the last century, and another ten years in the second half. Until not much more than a century ago in much of Europe, women with an average life expectancy of around 35-40 years bearing four or five surviving children might devote half or more of their adult lives to intensive infant care. Now women face a life expectancy of 75-80 years, and if they bear two children might devote around 5% of their adult lives to such activity. These children in turn will themselves lead longer, more productive, and reproductive lives. Indeed it is too often forgotten that this is what the entire demographic transition has been about: a democratization of longevity widespread enough to permit population stability or growth net of migration with less than half the fertility rate typical of pre-transition societies. Such reproductive efficiency has not only fuelled economic growth by releasing resources for production, but by dramatically reducing the social impact of the biological division of labour in reproduction, created the conditions for greater sexual equality.

Figure 6 shows that life expectancy at birth in Scotland is doing little to close the gap with England and Wales. Moreover, some areas of Scotland do far worse than the average. The standardized mortality ratio for Glasgow is one quarter higher than the average for Scotland (GROS 2004). Life expectancy for men and women in Scotland is some two years below that for England and Wales and around four years below some other countries in the European Union. Closing this gap (which would paradoxically ‘worsen’ population ageing) would significantly delay the onset of population decline.

8 The choice between migration and fertility

In common with many others, Wilson and Rees argue that while migration might influence the level of population, it has little effect on its age-structure, so that it is no substitute for natalism. Coleman (2002) uses the latest UN population estimates and projections to demonstrate that in order to preserve the present age structure of South Korea in the face of declining fertility, the entire population of the world would have to migrate there before the end of this century. However this argument does not follow, if, as we have suggested, there is no good reason to seek to preserve this, or any other, age structure of the population. Should fertility fall so low that employers faced a shortage of labour, there is no shortfall of potential migrants anxious to take them.

However, the preference for fertility goes beyond demographers’ knowledge of age structures to more general beliefs about migration as such. While affluent, mostly white, citizens of developed Western countries virtually take for granted their ability to move elsewhere, they are often more circumspect about the right of ‘others’, especially those from poorer countries, or with black skins, to settle here. Here too there are insights from demographic theory as well as instructive parallels with the past. In its translation from biology to demography, the term ‘population’ undergoes a little noticed inflexion in meaning that changes the sense of the term profoundly when used in the plural. There is a global population, singular, of human beings, whose size depends on global births and deaths. Populations, plural, associated with administrative and political units (states, world regions, cities, local authority areas etc.) are the fruit of administrative artifice rather than demographic dynamics. Migration is the act of crossing an administrative frontier (and not infrequently its inverse, when people located in a particular space find themselves circumscribed by new or re-drawn boundaries).

What is important is how these frontiers are socially constructed and represented. If we choose to imagine them as growing organically to circumscribe definable ‘populations’, plural, comprising definable ‘peoples’ we are well on the road to a racialised vision of the world. Here is Karl Pearson, founder of world’s first statistics dept, admired by Einstein, socialist (he refused an OBE and Knighthood), feminist, Honorary Fellow of the Royal Society of Edinburgh and eugenicist:

My view, and I think it may be called the scientific view, of a nation, is that of an organized whole, kept up to a high pitch of internal efficiency by insuring that its numbers are substantially recruited from the better stocks, and kept up to a high pitch of external efficiency by contest, chiefly by way of war with

inferior races ... No degenerate and feeble stock will ever be converted into healthy and sound stock by the accumulated effects of education, good laws, and sanitary surroundings. Such means may render the individual members of a stock passable if not strong members of society, but the same process will have to be gone through again and again with their offspring, and this in ever-widening circles, if the stock, owing to the conditions in which society has placed it, is able to increase its numbers. (1919: 36-7, 1892: 26-7)

Such an explicitly racist view of the world became less possible after the Holocaust. However it continues to underlie any approach that equates administratively constructed 'populations' with distinct peoples. To argue that the long term stability of the Scottish population is better based on fertility than migration is to fall, consciously or not, into the argument that the Scots, qua Scots, comprise a distinct 'people', or ultimately 'race' whose numbers merit protection (despite their own reproductive choices) analogous to some endangered species. Logically, to erect too hard a distinction between migration and fertility returns to precisely those eugenic arguments deployed a century ago with reference to race. Few demographers would claim there to be any shortage of global population. Thus any justification of a natalist policy at sub-global level must rely upon the argument that the human race is composed of qualitatively different elements, whose 'replacement', regardless of global population trends, or the reproductive behaviour of that 'people' itself, is desirable.

As well as a scientific question, fertility is a matter of popular rhetoric and public debate that tends to latch on to any alarmist imagery that, unfortunately, academics may sometimes employ without sufficient caution. This can be seen in newspaper headlines such as 'Scots face birthrate 'disaster'' (*Scotsman* 14 September 2002); 'Scotland's population crisis set to deepen' (*Scotsman* 14 April 2004); 'Pay up or die out' (*The Herald* 6 April 2004); 'Falling population threatens living standards' (*Sunday Herald* 11 January 2004); 'Scotland is emptying' (*Scotland on Sunday* 4 January 2004). The first political party to draw attention to the fertility regime in Scotland was, in fact, not the Scottish National Party, but the *British* National Party whose then Scottish organiser Peter Appelby penned a piece entitled 'Scotland's future is in our bedrooms' which attributing Scotland's falling birth rate to the rising cost of children. This is only what we might expect. Natalism has often been seen by ethnic nationalism, and more often than not by other nationalisms too, as its fundamental policy (Teitelbaum and Winter 1985). It would be unfortunate if public debate about demography was distracted by unduly exaggerated claims about the imminence or importance of severe population decline, or the supposed malevolent effects of immigration.

9 Is population size a legitimate policy goal?

In a context where almost ten per cent of the current Scottish population was born elsewhere in the UK, and the equivalent of sixteen per cent were born in Scotland but now live in other parts, anything but the most general management of population trends will be difficult. Short of closing the border how could immigrants be required to settle in Scotland? However, this must lead us to demographic pessimism only if we believe that the population size of a state (or in Scotland's case, constituent part of a state) is both a necessary and legitimate goal of government policy. Many

commentators in the 1930s sought to link population expansion with economic growth, including Keynes (1937) in, of all places, the *Eugenics Review*. However any such link has never been clearly demonstrated and the economic and social impact of stable or slowly declining populations has not hitherto been the subject of much research. As Coleman (2002) reports, UK, Dutch and German government inquiries in the 1970s and 1980s failed to conclude that stable or slowly declining population levels constituted a serious problem. Wilson and Rees's low fertility projections still leave Scotland with a population of some 3.5 million a century hence: hardly catastrophe or disaster, simply one aspect of social change that will inevitably be overwhelmed by others that we cannot yet even imagine.

10 Conclusions

It is important to remain conscious of the status of projections in demography. By this I do not mean that they are speculative or imprecise, although that is also true. I mean that they are a rhetorical device that seeks to invest our partial analysis of the present with the overarching authority of the future, rather like turns of phrase such 'future generations will judge us by...' or 'historians will look back and say...'. No methodology provides such a crystal ball. The demographers of 1905 imagined the world of 2001 with as much insight as we possess about 2101. Other social changes will transform the significance of the population estimates we might make for such periods far more than any trend in population itself. This does not mean that population should not be an object of study and policy. We do need to plan for the future as well as the present. Migration needs to be properly managed. There is ample space for family policies that ensure that having children is straightforward for all who wish them, or health policies that do not leave older sub-fertile patients with a waiting list of self-defeating length for treatment. However we do little to facilitate such planning if we do not balance the creativity of our demographic imaginations with sober judgment. While the long-term future of fertility is a matter for speculation, on current trends it seems very unlikely to fall so far as to require problematically high rates of immigration to sustain Scotland's population. Indeed, the years 2003 and 2004 saw rather significant increases in the number of births. Hospital delivery rooms are hardly empty. Scotland needs no pro-natalist policy.

References

- Anderson, M. (2004). One Scotland or several: the historical evolution of Scotlands population over the past century and its implications for the future, in *Scotland's Demographic Challenge*. R. Wright.
- Baumol, W. J. (1967). "Macroeconomics of unbalanced growth: the anatomy of urban crisis." *The American Economic Review* **157**: 415 - 426.
- Becker, G. S. (1965). "A Theory of the Allocaton of Time." *The Economic journal* **75**: 493-587.
- Becker, Gary S. (1981) *A Treatise on the Family*, Cambridge, MA: Harvard University Press.
- Bongaarts, J. and G. Feeney (1998). On the Quantum and Tempo of Fertility. *Working Paper 109*, Population Council Policy Research Division.
- Caldwell, J. C. (1982). *Theory of Fertility Decline*. London, Academic Press.
- Caldwell, J. C. and T. Shindlmayr (2003). "Explanations of fertility crisis in modern societies: A search for commonalities." *Population Studies* **57**: 241-263.
- Castles, F. (2003). "The world turned upside down: below replacement fertility, changing preferences and family-friendly public policy in 21 OECD countries." *Journal of European Social Policy* **13**(3): 201- 227.
- Centre for Longitudinal Studies. 2004. "Millennium Cohort Study First Survey 2001-2003[computer file] 2nd Edition.February. SN: 4683.University of London. Institute of Education." Colchester, Essex: UK Data Archive [distributor].
- Chesnais, J.-C. (1998). "Below-Replaement Fertility in the European Union (EU-15): Facts and Policies, 1960-1997." *Review of Population and Social Policy* **7**: 83 - 101.
- Coale, A. J. (1986). The Decline of Fertility in Europe since the Eighteenth Century As a Chapter in Demographic History. *The decline of fertility in Europe : the revised proceedings of a Conference on the Princeton European Fertility Project*. Princeton, N.J., Princeton University Press: 1-30.
- Coleman, D. A. (2002). "Replacement migration or why everyone is going to have to live in Korea: A fable form our times from the United Nations." *Philosophical Transactions of the Royal Society of London B* **357**: 583-598.
- Davis, K. (1937). "Reproductive Insitutions and the Pressure for Population." *Sociological Review*. **29**:284-306.
- Demeny, P. (2003). "Population Policy Dilemmas in Europe at the Dawn of the Twenty-first Century." *Population and Development Review* **29**(1): 1-28.
- Fukuyama, F. (1999) *The Great Disruption*. London: Profile Books.
- Frejka, T. and G. Calot (2001). "Cohort Reproductive Patterns in Low-Fertility Countries." *Population and Development Review* **27**(1): 103 - 132.
- Frejka, T. and J. Ross (2001). "Paths to subreplacement fertility: the empirical evidence." *Population and Development Review* **27**(Supplement): 213-54.
- General Register Office for Scotland (2004) *Scotland's Population 2004. The Registrar General's Annual Review of Demographic Trends*. Edinburgh: General Register Office for Scotland.
- Gershuny, J. I. and K. Fisher (2000). *Leisure in the UK Across the 20th Century. Twentieth-century British social trends*. A. H. Halsey and J. Webb. London, Macmillan Press.
- Giddens, A. (1991). *Modernity and Self Identity*. Cambridge, Polity.
- Giddens, A. (1992). *The Transformation of Intimacy: Love Sexuality and Eroticism in Modern Societies*. Cambridge, Polity.
- Goldstein, J., Lutz, W. and Testa, M. 2003. 'The emergence of sub-replacement family size ideals in Europe', *Population Research and Policy Review*, **22** (5-

- 6): 479 – 496.
- Grant, J., Hoorens, S., Sivadasan, S. van het Loo, M., DeVanzo, J., Hale, L., Gibson, S. and Butz, W. 2004. Low Fertility and Population Ageing: Causes, Consequences, and Policy Options, RAND: Santa Monica.
- Henry, Louis. 1965. "Reflexions sur les taux de reproduction." Population:53-76.
- Hobcraft, J. (2004). "Method, theory and substance in undersanding choices about becoming a parent: Progress or regress." Population Studies **58**: 81-84.
- Inglert, R. (1975) The Silent Revolution: Changing Values and Political Styles Among Western Publics, Princeton: Princeton University Press.
- Irwin, S. (2000). "'Reproductive regimes: Changing relations of inter-dependence and fertility change'." Sociological Research Online **5**(1): U151-U167.
- Keynes, J. M. (1937) 'Some Economic Consequences of a Declining Population' in The Eugenics Review **29**, 1, 13 – 17.
- Laslett, P. (1991). A fresh map of life: the emergence of the third age. Cambridge Mass, Harvard Univ. Press.
- Lesthaeghe, R. (2001). Postponement and recuperation: Recent fertility trends and forecasts in six Western European countries. Interuniversity papers in demography. Brussels, Interface Demography (Soco) Vrije Universiteit Brussel.
- Lesthaeghe, R. and P. Willems (1999). "Is Low Fertility a Temporary Phenomenon in the European Union." Population and Development Review **25**(2): 211-228.
- Linder, S. B. (1970). The Harried Leisure Class. New York, Columbia Univeristy Press.
- Lutz, W., O'Neill, B. and Scherbov, S. 2003. 'Europe's population at a turning point', Science. 299(28), March.
- McDonald, P. (2001). 'Theory Pertaining to Low Fertility'. International Union for the Scientific Study of Population Working Group on Low Fertility Conference International Perspectives on Low Fertility: Trends, Theories and Policies, Tokyo.
- McDonald, P. 2005 'Fertility and the State: the efficacy of policy' Paper to International Union for the Scientific Study of Population Tours, France, July.
- MacInnes, J. (2004). Voluntary Childlessness. Results from the Eurobarometer and Family and Fertility (FFS) Surveys. Papers de Demografia. Barcelona, Centre d'Estudis Demogràfics.
- MacInnes, J. (2005) 'Research Note: Gender Role Attitudes in Scotland.' Scottish Affairs. No. 51 pp. 107-113.
- MacInnes, J. (2005). "Work Life Balance and the Demand for Reduction in Working Hours: Evidence from the British Social Attitudes Survey 2002." British Journal of Industrial Relations. Vol 43:2, pp. 273-295.
- MacInnes, J. (2006) 'Work-life balance in Europe: a response to the baby bust or reward for the baby boomers?' in *European Societies*
- MacInnes, J. and Pérez Diaz, J. 2005 'The Reproductive Revolution'. Paper to International Union for the Scientific Study of Population Conference, Tours, France, July.
- Mason, K. O. (1997). "Explaining Fertility Transitions." Demography **34**(4): 443-454.
- Myrdal, A. (1968[1939]). Nation and Family. Cambridge Mass., M.I.T Press.
- Neyer, G. 2003. 'Family policies and low fertility in Western Europe', MPIDR Working Paper, WP 2003-021, July, Max Planck Institute for Demographic Research, Rostock.

- OECD (2001). "Balancing work and family life: helping parents into paid employment." OECD Employment Outlook.
- OECD 2004 OECD Employment Outlook 2004. Paris: OECD.
- Pearson, K. (1892) The grammar of science. London: W. Scott.
- Pearson, K. (1919) National Life from the Standpoint of Science, 2d Ed., Cambridge: Cambridge University Press.
- Pérez Diaz, J. (2003). "Feminización de la vejez y Estado del Bienestar en España." Revista Española de Investigaciones Sociológicas **104**: 91 - 122.
- Pérez Diaz, J. (2004). Madurez de Masas. Madrid IMSERSO.
- Simons J (1978) 'Illusions about Attitudes'. in Population decline in Europe. Council of Europe: Strasbourg.
- Sleeboos, J. (2003). Low Fertility Rates in OECD Countries: Facts and Policy Responses. OECD Social Employment and Migration Working Papers No 15. Paris, OECD.
- Smallwood, S. and Jeffries, J (2003) 'Family building intentions in England and Wales: trends, outcomes and interpretations'. Population Trends 112, 15-28.
- Soloway, R. A. (1990) Demography and Degeneration: Eugenics and the Declining Birthrate in Twentieth-Century Britain. Chapel Hill: University of North Carolina Press.
- Spengler, O. (1926). The Decline of the West. London, Allen and Unwin.
- Szreter S R S (1984). The genesis of the Registrar General's social classification of occupations. British Journal of Sociology XXXV, pp. 522-546.
- Teitelbaum, M. S. and J. M. Winter (1985). The Fear of Population Decline. Orlando, Florida, Academic Press.
- Thompson, W. (1929). "Population." American Journal of Sociology **34**: 959-75.
- Toulemon, L. (1996). "Very few couples remain voluntarily childless." Population: An English Selection **8**: 1-28.
- Van de Kaa, D. J. (1987). "Europe's Second Demographic Transition." Population Bulletin **42**(1 (Washington D.C.: Population Reference Bureau)).
- Van de Kaa, D. J. (1997). "Postmodern fertility preferences: from changing value orientation to new behaviour." Working Papers in Demography The Australian National University, Research School of Social Sciences **74**.
- Wilson, T. and P. Rees (2003). "Why Scotland needs more than just a new migration policy." Scottish Geographical Journal **119**(3): 191-208.

Table 1 Live Births, Scotland 1946-2004.

Year	Births
1946-50	101,222
1951-55	91,366
1956-60	98,663
1961-65	102,642
1966-70	93,033
1971-75	75,541
1976-80	65,758
1981-85	66,422
1986-90	65,544
1991-95	63,571
1994	61,656
1995	60,051
1996	59,296
1997	59,440
1998	57,319
1999	55,147
2000	53,076
2001	52,527
2002	51,270
2003	52,432
2004	53,957

Source: General Register Office Scotland

Figure 1 TFR Western Europe 1983 - 2002

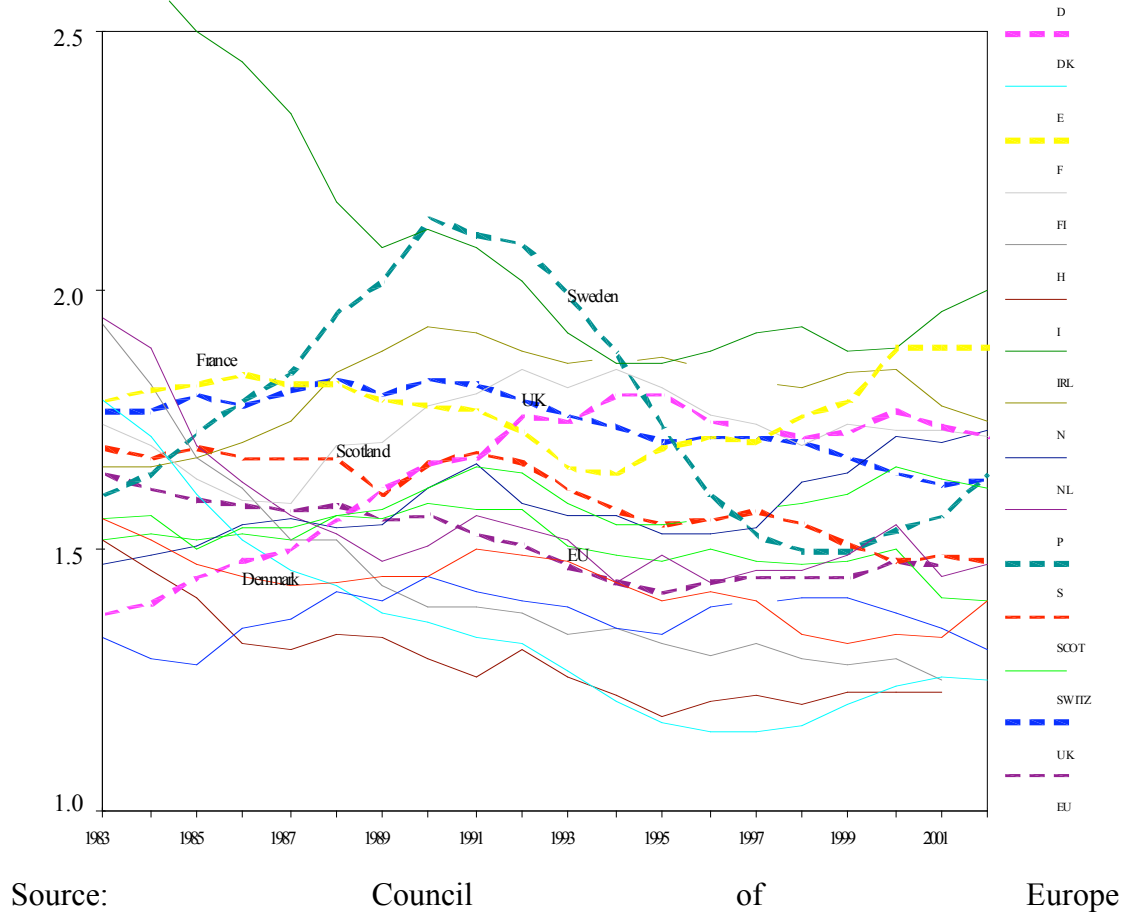


Figure 2

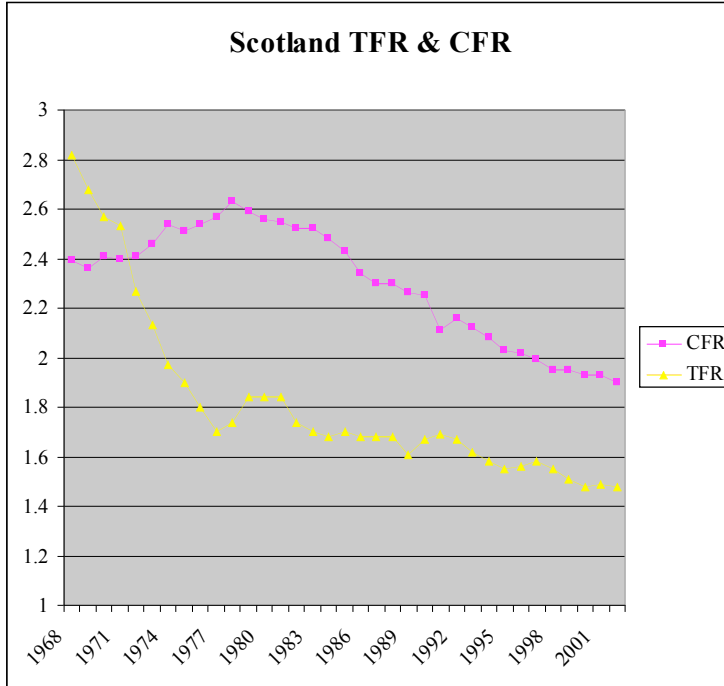
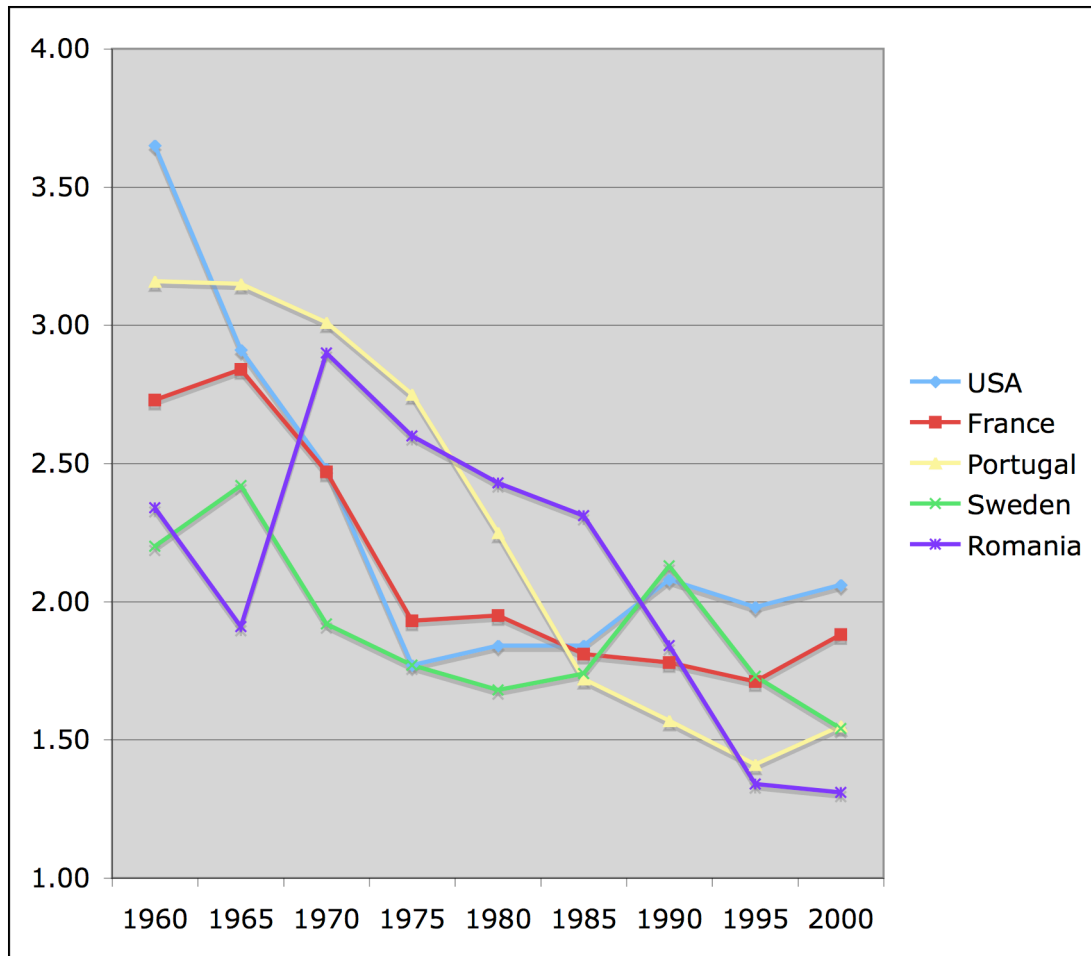


Figure 3. Total Fertility Rate, selected countries 1960 - 2000



Source: Council of Europe and US Dept. of Health

Figure 4 Scotland: population aged > 64: 1911-2002

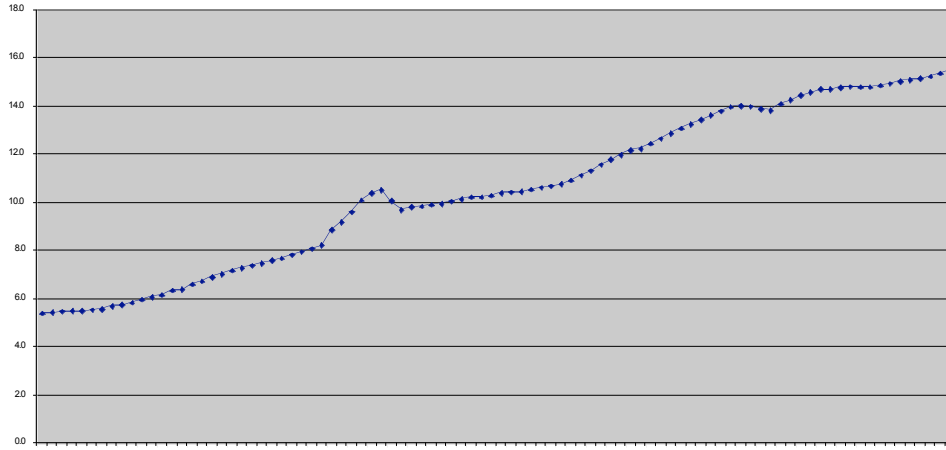


Figure 5 Scotland: support ratio and employment support ratio: 1911-2002

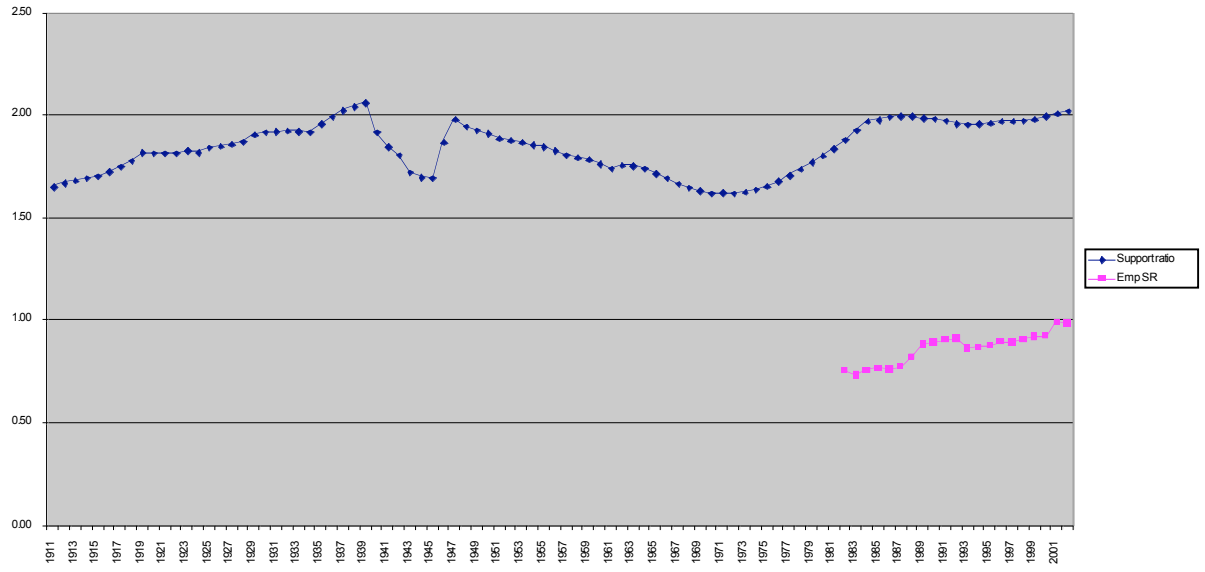
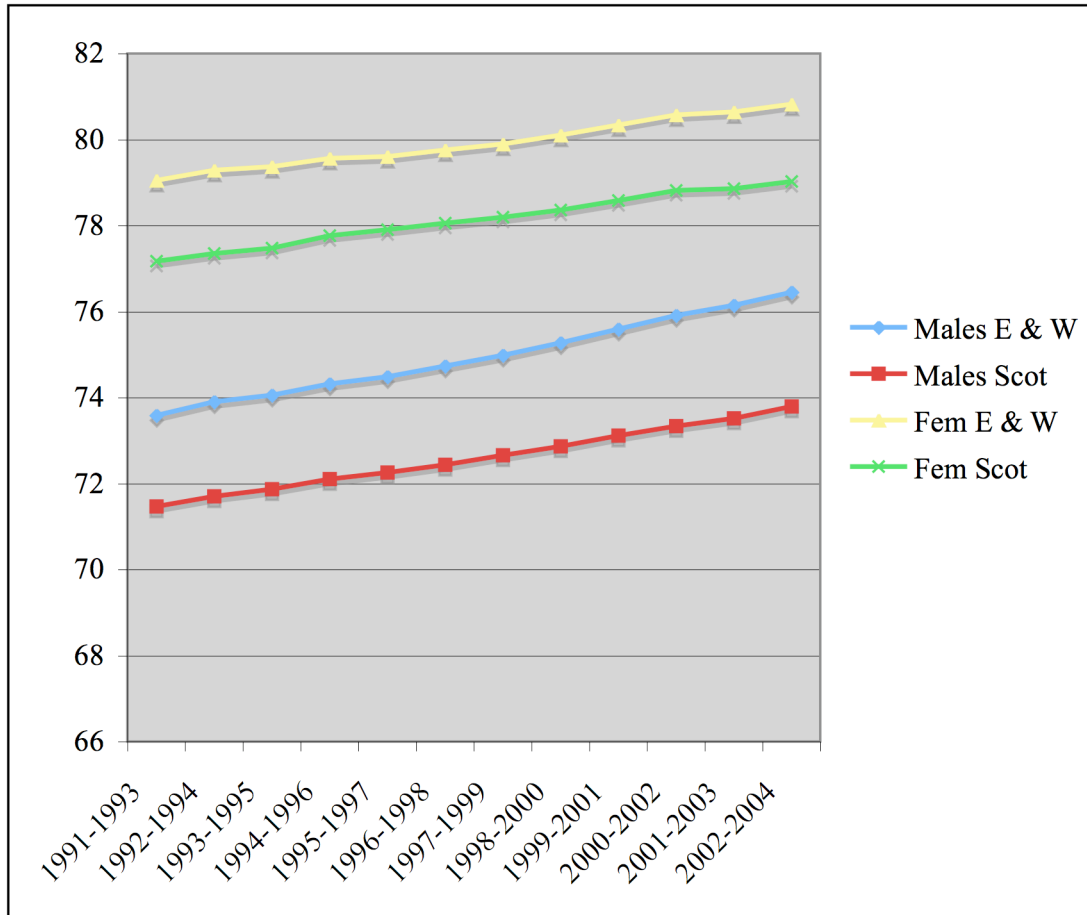


Figure 6 Life Expectancy at birth, Scotland and England and Wales, 1991-2004



Source: Life expectancy at birth by health and local authorities in the United Kingdom 1991-1993 to 2002-2004. ONS 2005

¹ Author's calculations from GHS 2003-4, respondents resident in Scotland.

² Author's calculations from MCS first wave