

**CAN THEY CARRY ON WORKING?  
LATER RETIREMENT, HEALTH, AND SOCIAL  
INEQUALITY IN AN AGING POPULATION**

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In debates on pensions and retirement age, little attention has been paid to the relation between increased effective retirement age and the health of the older population. This article focuses on Britain at a crucial point in the past, when the reconstruction that followed recession in the late 1970s and early 1980s used previously accumulated pension and redundancy funds to pay off workers and make labor markets “flexible.” Using secondary data analysis of surveys of the same nationally representative sample in 1984 and 1991, the author argues that, while early retirement and retirement at age 60 (women) and 65 (men) took many able-bodied people out of the labor force, every increase in retirement age would have faced diminishing returns. Moreover, unemployment and exit from the labor market were accompanied in most cases by a perceived decline in well-being. The findings suggest that retirement should be tapered, not abrupt. Finally, there was pronounced inequality in the aging process that would have led to a situation in which a uniform policy on later retirement deepened the disadvantage of those least able to fend for themselves. Accordingly, the present U.K. government should positively discriminate in favor of the disadvantaged at retirement by reinforcing the state pension.

The baby-boom generation of the postwar decades in developed countries is soon to be succeeded, but it has had fewer children than its own parents did. People are living longer having reached the age of 65. Baby-boomers have also been retiring earlier than their parents did. Governments tend to see any increase in aggregate spending on pensions, as on health and social care for the dependent old, as unproductive: a block on economic growth in a market economy (1). To guard against this assumed effect, they encourage people who would otherwise retire to remain in employment, where they will generate wealth, pay taxes, and contribute

to pension schemes rather than live off benefits and annuities. In the United Kingdom, the only legal fixture is eligible age for the state pension (65 for men and 60 for women, due to be equated at 65 by 2020), but custom and practice, often enforced by both employers and trade unions, limits the “flexibility” that many policymakers seek.

In the grand debate, relatively little attention has been paid to the crucial relation of increased effective retirement age to the health of the older population. If already-present incapacity arising from ill-health blocked the path to employing large numbers beyond current retirement age, and/or if health was put in jeopardy by continued employment, every advance in retirement age would face diminishing returns. Moreover, social inequality in the aging process might lead to a situation in which a uniform policy on retirement deepened the disadvantage of those least able to fend for themselves. These issues are the focus of the article.

## BACKGROUND

### *The Demography*

Current falls in both birth and death rates have been projected well into the 21st century. The projections are controversial and not necessarily reliable. There is debate among geneticists about whether the recent upward trend in life span might (2) or might not (3) hit a biological buffer. Fertility is much influenced by variable economic, social, and cultural factors and so is even more difficult to predict.

The history of the aging population to date is relatively uncontroversial. It was low fertility following the baby-boom generation that reduced the relative numbers who are and will be below retirement age, so contributing most to a rise in the proportion of the population aged 65 and over. On the other hand, life expectancy at 65 (roughly equivalent to life span) has also risen and is now a major driver of an aging population. In the United Kingdom between 1961 and 1997, it rose by 3.1 years for men and 3.5 years for women. There were corresponding increases for men of 2.8 years in the United States, 3.5 in France, and 5.1 in Japan; and for women, 3.1 years in the United States, 4.7 in France, and 7.7 in Japan (4).

Declining fertility has reduced the element of children and young people in the “dependency ratio.” Left to themselves, deaths in the baby-boom generation would eventually restrain the increase in the old age element in the dependency ratio, though at the expense of declining population. However, rising life expectancy at 65 suggests that the population will continue to age, even as the fertility-induced “aberration” of the late 20th and early 21st centuries works its way out.

In 2000, the United Nations advocated immigration as the necessary solution for aging populations (5). According to its report, only the United States, of all

developed countries, was set to benefit from migration across borders (increasing in population overall by 25% by 2050). The projection for the United Kingdom was based on old data that have been superseded (6). In the United Kingdom, a rise in immigration in recent years is now driving population upward, including an increase in fertility. The populations of other western European countries and Japan are a different case. They are expected to decline considerably overall on present trends, with insufficient immigration and a birth rate inadequate for natural reproduction.

Neither declining nor aging populations are self-evidently a bad thing. The issue that exercises policymakers is whether these can be reconciled with sustained production of wealth. One option is to increase the productivity of the younger people who remain in work, something the United States is currently better at doing than is the United Kingdom. Another option is to ensure that older men and women carry on working (7).

#### *Fiscal Crisis*

The increasing imbalance between number of people of 65 and over and number of working age is the underlying source of what is perceived to be a “fiscal crisis” that drives many developed countries to try to increase retirement age (8). But the crisis is not necessarily reducible to demography. It is largely constituted by way of life. The prevailing way of life in liberal democracies rests in part on these, essentially moral, propositions:

1. Those who can do so should work for their living, though it is nominally their choice.
2. Those who genuinely cannot work should be supported, if need be by the state.
3. Those who have reached the conventional retirement age are entitled not to work for gain.

“Can/cannot work” is assumed to be an objective distinction and is almost invariably decided on by accredited experts (medical professionals), while legal or conventional retirement age is applied regardless of capacity to work.

In the United Kingdom, after half a century (1900–1949) in which retirement was uncommon, for the next half-century people of retirement age were encouraged to retire and, for the latter half of that period, *early* retirement became relatively common. The combined effect of life expectancy at 65 and early retirement on economic inactivity in the last stage of life is represented for the United Kingdom, United States, France, and Japan in Table 1. If we take retirement age as 65 for both men and women, in Japan men do not on the whole retire early, and women are only slightly more likely to do so than not. France is at the opposite extreme. These two countries both have higher life expectancy

Table 1

## Survival following retirement

	Men			Women		
	Age at retiring, 1995	Life years at 65, 1997	Survival after retiring, years	Age at retiring, 1995	Life years at 65, 1997	Survival after retiring, years
U.K.	62.7	15.0	17.3	59.7	18.5	23.8
U.S.	63.6	15.9	17.3	61.6	19.2	22.6
France	59.2	16.3	22.1	58.3	20.8	27.5
Japan	66.5	17.0	15.5	63.7	21.8	23.1

Source: OECD Health Data 2001.

at 65 than the United Kingdom and the United States, but only in France do older men and women survive for conspicuously longer after retiring. In Japan, later retirement offsets greater longevity.

The implications of social spending on pensions for the wider economy are disputed. The Rurup Commission of Germany suggested in April 2003 that tax increases to maintain pensions for longer to more people at the prevailing rate might lead to a sluggish economy and high unemployment (9). In the United Kingdom, the relatively low state pension has been progressively (though unevenly) supplemented by occupational and personal pensions. These depend on a steady or rising stock market to maintain their value. On the other hand, pension funds are a major source of investment in the wider economy. Moreover, pensioners tend to spend what they receive, whether it comes from the state or private sources. Thus, the transfer of income by savings and taxes from earners to pensioners may even stimulate economic growth, keeping others in work and inducing productivity increases. Arguably, U.K. policymakers have overreacted to what is a relatively benign situation, at least compared with that of some other countries, and in so doing have put the pensions and well-being of pensioners at risk (10).

#### *The Health Effects of Rising Life Span*

Greater longevity is not coterminous with improved health. The central issue is whether the extra years are in good health and without significant disability. If they are, they might represent useful labor power. Life years in old age can be gained at the expense of chronic illness and disability. For instance, in the United Kingdom, a progressive fall from the early 1970s in the death rate from coronary heart disease has been accompanied by a *rise* in many symptoms of heart disease

(such as angina and nonfatal myocardial infarctions) and in several risk factors for heart disease, such as obesity and diabetes (11).

Table 2 shows that the steadily increasing life expectancy at 65 over the 21 years between 1976 and 1997 in the United Kingdom was matched by corresponding increases in years of disability *and* disability-free years. Life expectancy among men aged 65 rose by 2.5 years, from 12.5 to 15 years. Among women, the corresponding figure was 2 years, from 16.5 years in 1976 to 18.5 in 1997. Average years disability-free increased, but only by 0.6 for women, compared with 1.2 for men. Women also had a larger increase in disability years—1.5, as opposed to 1.3 for men. Throughout the period, women spent more of their years of life expectancy from 65 in disability than did men ( $B/(A+B)\%$  in Table 2); indeed, by 1997, almost half of their years after reaching 65 were in disability.

Disability is sometimes a once-for-all state that remains steady and is not associated with chronic illness. With advancing age, chronic illness that restricts activity normal for that period in life becomes more common. As for jobs, they vary in their demands on the body and mind. In principle, employers can accommodate jobs to disability to some extent and so determine what counts as “fitness.” But fitness is not infinitely malleable. A job to which one is unsuited can cause health to deteriorate (12).

#### *The “Young-Old” and the “Old-Old”*

“Pensioners” or “the old-old” are too coarse a category for this debate. In order to make better sense of the issues, we have to distinguish the “young-old” and the “old-old.” Where the young-old are concerned, the issue is when retirement

Table 2

Disability and life expectancy at age 65 at successive years  
in the United Kingdom

	Men			Women		
	(A) Disability- free years	(B) Disability years	B/(A+B) %	(A) Disability- free years	(B) Disability years	B/(A+B) %
1976	7.1	5.4	43.2	8.7	7.8	47.3
1981	7.6	5.4	41.5	8.5	8.4	49.7
1986	7.3	6.1	45.5	8.5	8.9	51.1
1991	7.9	6.3	44.4	9.3	8.7	48.3
1997	8.3	6.7	44.7	9.3	9.2	49.7

*Source:* Extrapolations from successive General Household Surveys.

from employment should occur so that their economic dependence on either personal capital or the earnings of others can be minimized. For the old-old the issue is how to make them less likely to be dependent physically/mentally and so make their dependence cheaper to service. If present birth and death rates persist, demand for long-term care in old-old age in the United Kingdom is likely to rise sharply ten years from now and to peak around 2040, thereafter declining. By comparison with many other developed countries, the United Kingdom has restrained the rate of increase in spending on formal long-term care, largely by budgetary control on state health services and through means-testing for access to social care. In effect, the state has been displacing responsibility for the old-old onto the users of services and their family carers (13).

The old-old are, of course, the young-old later in life. Thus, increasing effective retirement age reduces the proportion of the young-old who are dependent on capital/earnings of others; it also increases the take from taxes and contributions to occupational and personal pensions, reduces spending on benefits and from pension funds, and enhances the capital available to individuals if and when they become dependent in old-old age. Restraining the cost of servicing dependence in old-old age makes the available capital go further, whether it is funded from taxes, a product of fully funded insurance schemes, or personal.

The policy that is being evolved may be put in jeopardy by any of the following:

- Should later retirement impinge on the age at which fitness for work falls off and/or impair health, and so hasten the time at which a person becomes dependent.
- Should physical and mental dependence vary independently of chronological age, though policy and its implementation are guided by chronological age.
- Should those who are disadvantaged in the course of earlier life (as children and when in employment) age earlier than others do.
- Should pensions and personal capital be low among those who most need services in old-old age.

Many of these caveats are already realities. Women are more likely to survive than men, but also more numerous among the dependent in old age. Manual workers are less likely than nonmanual, and women less likely than men, to have the capital by the time they reach old age that would enable them to fund their own dependence or even live in semi-independence. Women and manual workers also tend to have lower pensions (14). If the state were to withdraw from provision of pensions and/or social and health care for the “average” person, it could aggravate the physically dependent status of the relatively disadvantaged (15). To the extent that the disadvantaged constitute a significant proportion of those most costly to care for in old age, such a policy in young-old age could lead either to unethical neglect of the interests of the old or to a rise in the cost to the state of caring for them, which could rob a policy of deferred retirement of any gains it might otherwise make.

## RESEARCH QUESTIONS

We have seen that the drift of policy toward a rise in effective retirement age poses a complex set of questions. We have also seen that, however confidently asserted, the science is uncertain, whether it is demography or economics. In what follows I shall try to answer a limited number of questions, having acknowledged that there are others of fundamental importance:

- To what extent is there a reserve of the able-bodied—to be taken up by encouraging a shift from welfare to work and so increasing retirement age?
- To what extent might increasing retirement age damage the health of the population?
- Are health inequalities likely to be increased by an increase in the retirement age?

## SOURCES AND METHOD

To explore the possible health effects of the radical change of policy that is underway, I focus on Britain at one point in the past: 1984–1991. A critical juncture in forming the present policy in the United Kingdom was the reconstruction that followed the economic collapse and major rise in unemployment of the late 1970s and early 1980s. Reconstruction took the form of liberalizing the market and was enabled by a rise in the numbers of people granted early retirement or classed as permanently sick, especially in areas with manufacturing and extractive industries. Much of the funding came from employer pension or redundancy funds backed up by statutory pensions, incapacity benefits, and redundancy schemes.

The data set is the national Health and Life Styles Survey (HALS), which used interviews and clinical tests on the same stratified random cluster sample throughout Britain of adults of all ages in both 1984 and 1991 (16, 17). The overall sample size for those surveyed at both dates was 5,344. The youngest were aged 18 in 1984, and there was no upper age limit. As in an earlier paper (18), aggregate employment indicators for the local labor markets (travel-to-work areas, TTWAs) in which respondents lived have been added to the original data set,<sup>1</sup> as have deaths among respondents of 1991 in the five years that followed.

The context in 1984–1991 in Britain was one of a short boom then bust, following on from the deep recession of the early 1980s. Toward the latter end of 1984–1991, both stock *and* property markets wobbled after consistent rises. Personal capital and pension funds both seemed in peril. At this juncture, the trend to earlier retirement collided with the growing need to reduce the numbers

<sup>1</sup> TTWAs cover areas within which 75 percent of residents find employment. These were aligned with HALS by using the keys for reconciling post codes with TTWAs developed by NOMIS, at the University of Durham.

dependent on earners and on capital. It was thus a critical juncture in the move toward current policy on retirement and pensions.

Alternative data sets would have been the national Retirement Survey and the British Household Panel Survey (BHPS). The Retirement Survey is specifically a survey of the retired and so would not enable investigation of transitions in employment status. The BHPS, on the other hand, would allow the story to be extended closer to the present day. It has been used elsewhere to assess the variable income status of people entering retirement (19).

The present analysis is occasionally done by cross-tabulation, but more often by logistic regression, where predictor variables are used in groups to estimate binary outcomes. The chosen level of significance is 5 percent. Estimates are quoted as odds ratios, where 1.000 signifies no relation, more than 1.000 a positive relation, and less a negative relation. Upper and lower levels of the 5 percent confidence interval are quoted for each odds ratio. Statistically significant results are in bold type in the tables.

## RESULTS

### *Is There a Reserve of Capacity to be Taken Up by Increasing Retirement Age?*

The optimistic view of the change of policy is that there is a plentiful reserve of labor power to be taken up by the continued employment of those who would otherwise retire, because many who retire are fit for work. Is there evidence for this in the HALS data?

Between 1984 and 1991, some of the HALS sample left employment on reaching retirement age (65 for men, 60 for women at that time), some reached this age but continued to work, others retired from work before they reached retirement age, and the majority of those under retirement age remained in employment. Why were many respondents still economically active in 1991?

Economic activity means having or seeking work, not necessarily being employed. Men were more than four times as likely as women to be economically active, when allowance was made for age and limiting long-term illness (Table 3). The economically active were also less likely than the inactive to report limiting long-term illness when age and gender were allowed for. People with limiting long-term illness had four-tenths the chance of being active of those without it. Thus, limiting long-term illness was not exactly a bar to being economically active, but still a considerable hurdle. State pension age was much more like an absolute bar. With limiting long-term illness controlled, the chance of continuing in employment beyond retirement age when it was reached in the preceding seven years was one-sixteenth of continuing if one was of pre-retirement age in 1991. And if retirement age was reached before

Table 3

Being economically active, by gender, age relative to retirement, and limiting long-term illness in 1991 (HALS91)

Predictor variables	Values	Log odds ratio	95% Confidence interval	
			Lower	Upper
Retirement (65 male, 60 female)	Pre-retirement	1.000		
	Reached 1984–91	<b>0.064</b>	<b>0.052</b>	<b>0.079</b>
	Already reached	<b>0.007</b>	<b>0.005</b>	<b>0.010</b>
Gender	Female	1.000		
	Male	<b>4.349</b>	<b>3.635</b>	<b>5.203</b>
Limiting long-term illness in 1991	None	1.000		
	Any	<b>0.416</b>	<b>0.354</b>	<b>0.488</b>

the preceding seven years, the chance of being economically active was much less: 1/140 that of someone of pre-retirement age in 1991. It seems inescapable that, however desirable retirement might be on social grounds, it is not always justified by ill-health. As a result, one could argue that there is plenty of “slack” to be taken up by increasing the retirement age.

Table 4 attempts to quantify the reserve for men and women of different ages. Five middle-aged groups are examined this time, and both genders. A distinction is made between those who were economically active in 1991 and those who did not participate in the labor market. The percentages under each of these headings for each age group and gender reflect those who did *not* report limiting long-term illness: among men aged 50–54, the “fit” represented a large majority of men who were active and a small minority of men who were inactive. The numbers in parentheses in Table 4 are the total numbers of active or inactive men and women in each age group. In the columns headed Reserve/Active, the raw numbers indicate those who are inactive and do not report long-term illness, and the percentages indicate the increases their *addition* would represent to the numbers active in that age group. On the evidence from HALS for the middle-aged, the amount of “slack” among the inactive rises with age, and especially steeply with the onset of retirement age. The table summary shows that women are more likely to be fit but inactive than are men before retirement age. But for both genders, the numbers that are economically active after retirement would rise more than fourfold if those who were fit sought gainful employment.

Table 4

*Not having limiting long-term illness in middle age, by gender and economic activity (HALS91)*

Age in 1991	Men			Women		
	Active	Inactive	Reserve/ Active	Active	Inactive	Reserve/ Active
50–54	70.1% (184)	5.9% (17)	+1 0.5%	70.6% (204)	48.7% (78)	+38 18.6%
55–59	65.6% (157)	19.6% (56)	+11 7.0%	71.8% (163)	47.4% (116)	+55 33.7%
60–64	57.5% (106)	43.8% (80)	+35 33.0%	60.5% (43)	54.7% (192)	+105 244.2%
65–69	48.5% (33)	46.9% (177)	+83 251.5%	62.5% (15)	50.7% (103)	+52 346.7%
70–74	60.0% (10)	48.3% (149)	+72 720.0%	100.0% (3)	48.8% (98)	+48 1600.0%
Summary 50–74	(490)	(479)	+202 41.2%	(428)	(587)	+298 69.6%
Retired	(43)	(326)	+155 360.5%	(61)	(393)	+205 336.1%

*Note:* See text for explanation of data presentation. “Retired” covers ages 65–74 for men, 60–74 for women.

*To What Extent Might Increasing Retirement Age  
Damage the Health of the Population?*

HALS had a longitudinal design, if a limited one. It measured health and other aspects of life at two points in time, separated by seven years. Everyone in the sample aged by the same amount between 1984 and 1991. As people age, so more of them develop long-term illness and handicaps and become marginal for employment. Many leave employment, yet some continue to be economically active. Is remaining economically active likely to be a threat to health? Does this threat increase with age?

There are two possibilities here: the first, in the so-called healthy worker effect, that health selects for continuing employment and ill-health for retirement; the second, that continued employment causes health to deteriorate. The comparison between two points in people's life that HALS permits is not enough to prove one or the other, but it could suggest the balance of probabilities and whether both processes might be happening.

*Developing Long-Term Illness with Age.* Table 5 relates development of long-term illness with age to changes in employment status between the two phases of the survey (1984 and 1991). It suggests (in column A) that, when changes in employment status are allowed for, self-reported limiting long-term illness is increasingly prevalent in each successive age group up to and including 55–64.

Table 5

Limiting long-term illness by gender, age, and social class and change in work status, 1984–1991, log odds ratios

Independent variables	Dependent variables		
	(A) LLTI in 1991	(B) Developing LLTI 1984–91	(C) Two or more items of clinical morbidity in 1991
Female	<b>0.789 (0.689–0.903)</b>	0.997 (0.839–1.184)	0.997 (0.867–1.146)
Age group			
25–34	1.000	1.000	1.000
35–44	<b>1.338 (1.070–1.673)</b>	<b>1.050 (0.784–1.406)</b>	<b>1.545 (1.203–1.986)</b>
45–54	<b>2.060 (1.655–2.565)</b>	<b>1.607 (1.217–2.123)</b>	<b>2.455 (1.925–3.132)</b>
55–64	<b>2.414 (1.913–3.047)</b>	<b>1.366 (1.008–1.850)</b>	<b>3.459 (2.685–4.457)</b>
65–74	<b>1.640 (1.207–2.228)</b>	1.328 (0.906–1.946)	<b>3.362 (2.444–4.624)</b>
75 plus	1.339 (0.930–1.929)	<b>1.767 (1.119–2.789)</b>	<b>3.788 (2.606–5.506)</b>
Manual	1.021 (0.902–1.155)	1.063 (0.907–1.246)	<b>1.237 (1.089–1.405)</b>
Change in work			
Employed	1.000	1.000	1.000
Inactive	<b>3.968 (2.972–5.299)</b>	1.253 (0.869–1.807)	<b>1.537 (1.156–2.042)</b>
Retiring	<b>2.930 (2.315–3.709)</b>	<b>2.508 (1.888–3.332)</b>	<b>1.433 (1.130–1.817)</b>
Some unemployed	<b>1.644 (1.242–2.175)</b>	<b>1.498 (1.049–2.140)</b>	1.142 (0.836–1.560)
Some home-making	<b>1.524 (1.264–1.837)</b>	1.167 (0.912–1.492)	<b>1.266 (1.042–1.538)</b>

Note: LLTI, limiting long-term illness.

At 65 and over, the rate of increase with age tails off, and ceases to be significantly different from that of those aged 20–34 after 75 is reached. In other words, health deteriorates sharply with advancing age, at a time when most people are economically active, and, once most cease to be active, health deteriorates much less quickly. On the other hand, those minorities who are out of employment at some point in the seven years 1984–1991—inactive, retiring, unemployed, or homemaking—are significantly more likely than the majority within employment to report limiting long-term illness. The effect is strongest among those who remain inactive throughout the seven years (the odds ratio is nearly 4), and is nearly as high (an odds ratio of 3) for those who retire from employment within the period. This is consistent with the hypothesis that health status selects for employment, rather than employment causing health to worsen. It seems that both processes are at work. Neither is more likely, it seems, among manual than nonmanual workers. When age and employment status are allowed for, however, men are significantly more likely than women to report incapacity. This may reflect the more continuous employment that is typical of men. Men withdraw from employment when they have limiting long-term illness, but women do so for other reasons as well.

Column B in Table 5 reports newly developed long-term illness in the seven-year period: its incidence rather than its prevalence. There is a step change in the age group 45–54—when people are overwhelmingly in employment. In the age group following retirement (65–74) the incidence is not significantly higher than it is at 25–34. We saw that prevalence was not significantly higher in old-old age (75 and over) than at 25–34, but incidence is so. The oldest age group is developing limiting long-term illness more rapidly than people of any other age. This suggests that there are diminishing returns to any attempt to bring people of 75 and over into employment. There is no significant difference between men and women in incidence of limiting long-term illness, when changes of age and employment status are allowed for. Allowing for age, incidence of limiting long-term illness is no higher among those who are economically inactive than among those remaining in employment. It rises most among those who are retiring from employment in the seven-year period. People who experience some unemployment (in 1984 or 1991 or in both years) are significantly more likely than those who remain in employment to become incapacitated. The results lend some support to the idea that health selects for employment. On the other hand, unemployment is involuntary withdrawal on grounds other than ill-health. It is probable that unemployment causes ill-health. Social class has no effect on incidence independent of employment status.

Finally, column C in Table 5 switches from self-reported measures of incapacity to assessments of clinical morbidity carried out by clinicians using standardized methods: forced expiratory volume (FEV1), blood pressure (allowing for control by medication), and body mass index. The results are similar to those in column A, except in two respects. First, manual workers are significantly more likely to

display clinical morbidity than nonmanual workers. Second, clinical assessment has a more linear relation with age and a weaker association with employment status than does limiting long-term illness. The results for limiting long-term illness might be comparable to but less “hard” than those for clinical morbidity, or they might indicate different qualities. Limiting long-term illness is self-reported. It is possible that respondents are more inclined to discount the effect of aging on their health than the effect of health on their capacity for employment. On the other hand, limiting long-term illness is qualitatively different from having symptoms of clinical morbidity: it defines incapacity that is palpable to the subject, not a condition, such as high blood pressure, that may or may not cause limitations.

Figure 1 graphs the raw data on which the logistic regressions reported in columns A and B of Table 5 are based, in order to bring out the trajectories of the interaction between health and employment transitions as people age. About 10 percent reported limiting long-term illness in 1984 but not again in 1991. Since this proportion does not vary with age, it seems reasonable to treat it as error; accordingly, it has been removed from the baseline. The lower section of each bar in the figure represents percentage confirming at that age in 1991 long-term illness first reported in 1984. The upper section of each bar represents the development of new cases of limiting long-term illness over the seven-year interval. Thus the bar as a whole shows how much limiting long-term illness has

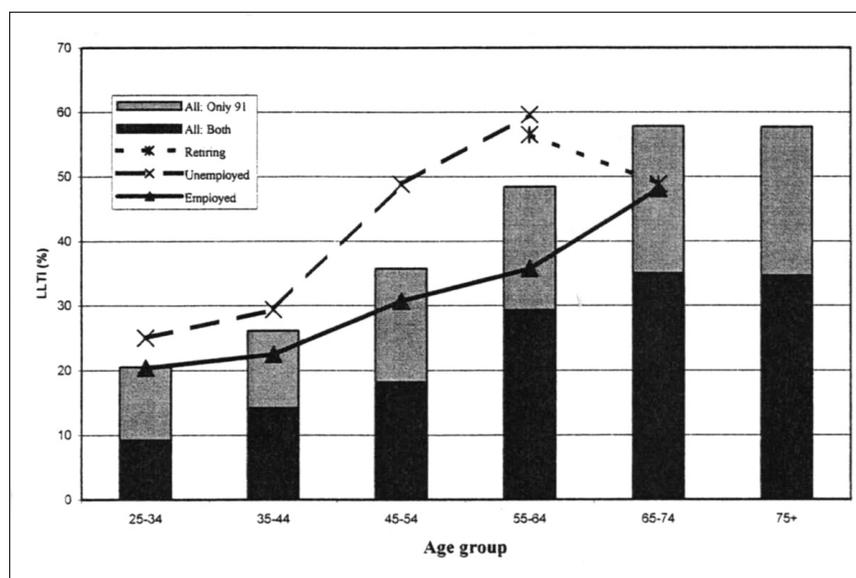


Figure 1. Limiting long-term illness (LLTI) by age and employment status. See text for details.

accumulated to that age and how quickly it is being added to. Up to 65–74 the ascent is steady, and new cases are being added at an accelerating rate. Then the total plateaus in old-old age. By that age, the numbers in the sample have attenuated. Only 454 responded in both 1991 and 1984 who were age 75 and over in 1991, as against 1,049 who were 35–44 and 723 who were 65–74. The plateau between 65–74 and 75 and over may reflect health selection by death between 1984 and 1991 among those of 75 and over. The lower line in Figure 1, running from 25–34 to 65–74, depicts the accumulation of limiting long-term illness among those in employment at each age. It goes upward, but less steeply than for the sample as a whole. By contrast the upper line depicts the trajectory of illness among those who were unemployed in 1984 or 1991 or at both dates. It is always at a higher level than that of the sample as a whole, and in particular that of the employed. It also rises more steeply. Finally the short line for 55–64 and 65–74—in the zone of retirement—suggests, by its *fall* with age, that early retirement is accompanied by ill-health more often than is retirement on attaining state-pension age.

Figure 2 repeats the line graphs in Figure 1 for clinical morbidity. The prevalence rises with age among those in employment until 65–74. However, it falls with age among those retiring from employment, to a level below that found among people remaining in employment. People who remain inactive from 1984 to 1991 show a sharper rise in clinical morbidity than those remaining in employment, but only until they reach 55–64. Thereafter the prevalence of clinical morbidity tails off for all three categories. The prevalence of clinical morbidity among those with some unemployment rises alongside that of those in employment until the age of 55–64, but then this too tails off sharply.

Thus, at age 65–74 (the range within which a rise in retirement age is proposed), people in employment are becoming incapacitated at a rate sharper than those leaving employment or remaining outside it. This suggests that even this age group, let alone the oldest group, marks a zone of “diminishing returns”—much as political economists writing of agricultural improvement in the late 18th and early 19th centuries would have conceived it. They were thinking of land and its fertility. We are thinking of labor and its productivity, and the other side of the coin: human beings and their health.

*Feeling That Own Health Has Deteriorated with Age.* Table 6 shows, as may be expected, that there is a relation between developing limiting long-term illness between 1984 and 1991 and feeling that one’s health deteriorated between 1984 and 1991. Becoming unemployed and leaving an active for an inactive status are also accompanied by a sense of worsening health. However, in addition to what was found in Table 5 and Figure 1, continuing to be inactive in the seven years is associated with worsening self-assessed health. Furthermore, while remaining in a home-maker status seems to induce a sense of loss of well-being over the period, coming out of that status into economic activity has

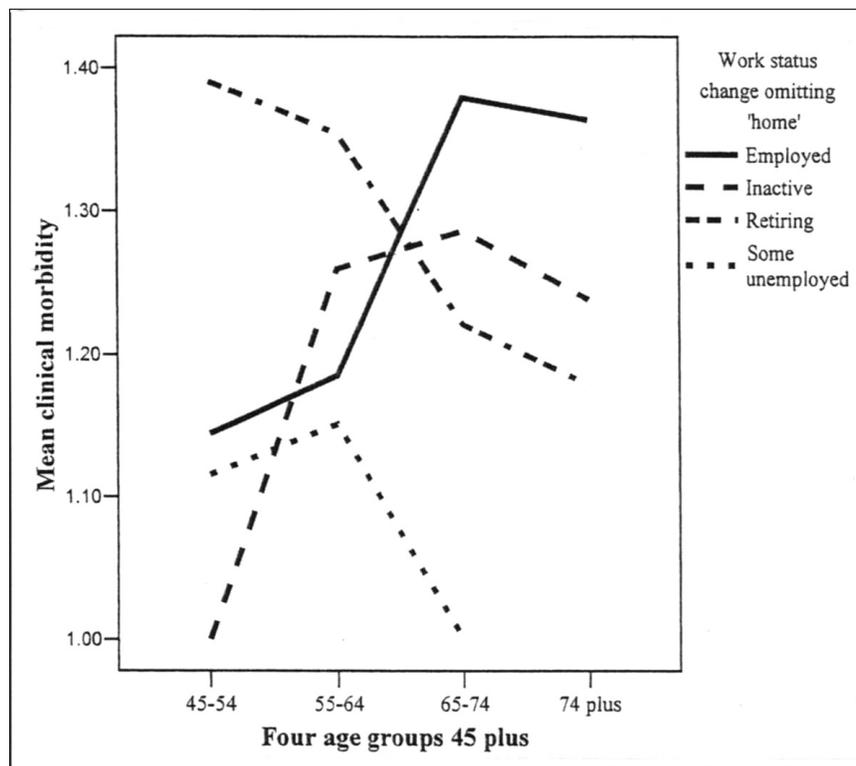


Figure 2. Age group, changing work status, and clinical morbidity. See text for details. ("74 plus" indicates age 75 and over.)

the opposite effect. All these findings, it should be noted, are independent of whether the person reports limiting long-term illness. They are also independent of age group.

It was not being employed that made people feel their health had deteriorated, but being out of work or becoming economically inactive. Taken together, the findings of Tables 5 and 6 suggest that there are two qualitatively different factors that need attention in plans to increase retirement age. The first is the tendency of limiting long-term illness and clinical morbidity to develop with age, which implies diminishing returns to any increase in retirement age. The second is people's *feeling* that their health is deteriorating in association with withdrawal from employment (or improving when they move into economic activity out of home-making). This may reflect some or all of the following factors: reduced income, loss of social contacts, and fall in status that may follow retirement.

Table 6

Perceiving own health to be worse in 1991 than in 1984, by gender, age, change in employment status, and developing long-term illness (HALS84/91)

Predictor variables	Values	Log odds ratio	95% Confidence interval	
			Lower	Upper
Employment status, 1984–91	Employed	1.000		
	Home	<b>1.398</b>	<b>1.001</b>	<b>1.953</b>
	Inactive	<b>3.695</b>	<b>2.678</b>	<b>5.100</b>
	Unemployed	1.803	0.973	3.343
	Unemployed to employed	0.920	0.525	1.611
	Employed to unemployed	<b>2.950</b>	<b>1.864</b>	<b>4.668</b>
	Home to active	<b>0.588</b>	<b>0.400</b>	<b>0.866</b>
	Active to home	1.074	0.689	1.675
	Home to inactive	<b>3.199</b>	<b>2.114</b>	<b>4.841</b>
	Active to inactive	<b>3.065</b>	<b>2.342</b>	<b>4.011</b>
Limiting long-term illness, 1984–91	Unchanged	1.000		
	Developing	<b>2.081</b>	<b>1.755</b>	<b>2.468</b>
Age group, 1991	24–34	1.000		
	35–44	1.085	0.834	1.412
	45–54	1.209	0.933	1.567
	55–64	1.099	0.826	1.461
	65–74	1.145	0.598	1.219
	75+	1.145	0.765	1.714
Gender	Female	1.000		
	Male	1.020	0.878	1.185

*Are Health Inequalities Likely to Be Increased by an Increase in the Retirement Age?*

Health inequalities may be a function of geographic area and so differentiate populations. Alternatively, they may differentiate between groups of people in the same population, as can gender, class, and ethnicity. Tables 7 and 8 attend to both area and individual differences. Only gender and class are dealt with, because minority ethnic groups were insufficiently represented in HALS to make that comparison meaningful.

In general, the life expectancy of manual workers is inferior to that of non-manual workers, and of men to that of women. Life expectancy at birth in England and Wales in 1997–1999 was 78.5 years for males and 82.8 for females in Social Class I (professionals) and, at the opposite extreme, 71.1 years for males and 77.1 for females in Social Class V (unskilled manual workers). Furthermore, the gap between Social Classes I and V widened for males from 5.5 years in 1972–1976 to 9.5 years in 1992–1996, though it declined to 7.4 years by 1997–1999 (20). This suggests that manual workers would have more to lose than nonmanual workers, and men more than women, if retirement age were increased. Women are more likely to survive to old-old age than men. On the other hand, they are more likely to have limiting long-term illness after age 65 (see Table 2).

*Patterns of Changing Economic Activity.* Table 7 shows how patterns of economic activity at 1984 and 1991 differed for men and women and for manual and nonmanual workers. Nonmanual workers of both genders are far more likely to be employed at both ends of the seven-year period than are manual workers. Men are more likely to be employed at both dates than women. Male manual workers are much more likely than males of the nonmanual class and than women of either class to be unemployed at both dates. Male manual workers are more likely to be out of the labor market altogether in 1984, 1991, and at both dates than male nonmanual workers. There is a corresponding difference between women of the two classes. Finally, women differ hugely from men in the spells they take out of the labor market to undertake home-based activities. The lower level of Table 7 correlates class and gender with level of unemployment in the area. In 1991, Britain went into renewed recession after some five years of recovery, and unemployment, already high in some areas, began to rise generally. Rates of unemployment in travel-to-work areas were regularly updated. Table 7 shows that, for men and women alike, the probability of being in a local labor market with a high unemployment rate increases for manual occupations.

*The Probability of Death before 80 by Gender, Class, and Local Unemployment.* What are the implications for health of these large gender and class differences in careers in and out of the labor market? The HALS research team plotted deaths in the five years that succeeded the second sweep of the survey in 1991. Of course, death is not necessarily a consequence of ill-health, and death is a relatively infrequent event in the sample: 122 respondents died by 1996, before they reached 80. Thus death is a less stable criterion for estimations than are more frequent events, such as limiting long-term illness.

Table 8 estimates death before the age of 80 (i.e., among respondents aged below 75 in 1991) for gender and social class, age, and changes in employment status between 1984 and 1991. The strongest predictor of death by 80 is, unsurprisingly, advancing age, though it is statistically significant in this sample only

Table 7

Proportions of nonmanual and manual workers, male and female, with continuing or changing employment statuses 1984–1991 or living in local labor markets with varying levels of unemployment in 1991 (HALS84/91)

	Men		Women	
	Nonmanual	Manual	Nonmanual	Manual
Employment status, 1984–91				
Employed	69.9%	51.8%	45.9%	30.6%
Home	00.0	00.2	08.1	09.7
Inactive	14.8	19.1	15.3	24.3
Unemployed	00.6	03.5	00.2	00.4
Unemployed to employed	01.8	04.9	01.3	01.2
Employed to unemployed	01.2	03.7	00.9	01.0
Home to active	00.0	00.2	11.1	14.3
Active to home	00.3	00.6	05.6	04.9
Home to inactive	00.0	00.1	03.4	05.2
Active to inactive	11.3	15.8	08.2	08.4
	100%	100%	100%	100%
	(984)	(1,259)	(1,725)	(1,191)
Level of unemployment in TTWA, 1991				
Low	40.9%	31.1%	38.1%	32.8%
Medium	24.9	27.5	24.0	24.4
High	34.2	41.4	37.9	42.8
	100%	100%	100%	100%
	(877)	(1,174)	(1,573)	(1,124)

Note: TTWA, travel-to-work area.

after the age of 55. Men are more likely to die before 80 than women. Continuity and change in employment status between 1984 and 1991 is an important predictor notwithstanding age and gender. Those who remained employed were *least* likely to die early, even when age was allowed for. Those involved in homework in 1984 and 1991 (overwhelmingly women), those inactive at both dates, and those who withdrew from the labor market between 1984 and 1991 were, in descending order, the most likely to die before 80, all at the 5 percent level of significance. Another dimension of health inequality is geographic. In Table 8, level of unemployment in local labor markets serves as an indicator of deprivation to help estimate death by 80. The association is not strong. Yet the higher the level of unemployment, the more likely are people in the area to die before 80,

Table 8

Death before age 80 by 1996, by gender, social class, age, and change  
in employment status (HALS84/91)

Predictor variables	Values	Log odds ratio	95% Confidence interval	
			Lower	Upper
Gender	Female	1.000		
	Male	<b>1.841</b>	<b>1.198</b>	<b>2.831</b>
Age group, 1991	25–34	1.000		
	35–44	1.566	0.141	17.432
	45–54	6.176	0.766	49.821
	55–64	<b>20.547</b>	<b>2.714</b>	<b>155.587</b>
	65–74	<b>36.335</b>	<b>4.581</b>	<b>288.166</b>
Social class	Nonmanual	1.000		
	Manual	1.481	0.986	2.226
Employment status, 1984–91	Employed	1.000		
	Home	<b>3.638</b>	<b>1.139</b>	<b>11.627</b>
	Inactive	<b>3.868</b>	<b>1.783</b>	<b>8.391</b>
	Unemployed	4.271	0.900	20.260
	Employed to unemployed	2.872	0.622	13.260
	Unemployed to employed	0.000	0.000	— <sup>a</sup>
	Home to active	1.046	0.133	8.252
	Active to home	2.553	0.549	11.867
	Home to inactive	2.867	0.931	8.829
Active to inactive	<b>2.768</b>	<b>1.349</b>	<b>5.679</b>	
Level of unemployment	Low	1.000		
	Medium	1.671	0.984	2.837
	High	<b>1.814</b>	<b>1.117</b>	<b>2.946</b>

<sup>a</sup>Lack of data here is a consequence of the low frequency of death in the sample and the high standard error.

even when gender, age, and class composition are controlled for: the relation between death by 80 and high unemployment is statistically significant.

Table 9 seeks to assess the unequal effect that increasing retirement age may have; it examines, for men and women, the impact that social class and levels of unemployment in local labor markets might have on two outcomes: (a) fair/poor respiratory condition in 1991 (measured by FEV1) and (b) death before age 80 by

Table 9

Men and women aged 65–69 in 1991 having fair/poor respiratory condition in 1991 and premature death within five years, by social class and level of unemployment in local labor market (HALS91)

Outcome	Men		Women			
	Nonmanual	Manual	Nonmanual	Manual		
Fair/poor respiratory	21.1% (76)	23.4% (94)	12.3% (81)	25.6% (90)		
Death by age 80 within 5 years	9.1 (88)	11.3 (115)	7.6 (105)	8.8 (114)		
	Level of unemployment			Level of unemployment		
	Low	Medium	High	Low	Medium	High
Fair/poor respiratory	13.6% (59)	24.5% (49)	32.6% (46)	19.6% (56)	13.5% (37)	21.9% (64)
Death by age 80 within 5 years	7.4 (68)	8.2 (61)	14.3 (56)	8.7 (69)	8.2 (49)	9.6 (83)

1996. It is clear that the chances of having poor respiratory condition at the time of the second survey in 1991 and of dying in the subsequent five years increase for manual workers and those who live in labor markets where unemployment is high. The effects of unemployment are notably stronger on men than women. From this evidence, it seems inescapable that increasing effective retirement to a uniform age, such as 70, would disadvantage men, manual workers, and people in areas where unemployment is relatively high. Such a policy would increase health inequalities.

## DISCUSSION

Policy in the United Kingdom on retirement and health and social care provision for old age has turned a corner. Under the new regime, pension and health and social care provision for old age have come to be regarded as a matter of choice and foresight by individuals, or at worst of residual welfare provision (21). However, neither the older (who rarely could) nor the younger (who could) have yet responded in numbers to the call to save for their old age.

Demographic and economic projections depend on the continuation of current trends and carry greater uncertainty than those who adopt them often admit to. Moreover, the “science” they speak to conceals value judgments. Thus, it has been assumed that there are many people now out of the labor force because of retirement who could carry on working, and so make good the shortfall in taxes and contributions and the excess of pensions to which an aging population is alleged to condemn developed economies. In this article I have analyzed data from a national survey (HALS) that took place between 1984 and 1991 as the United Kingdom moved short term from boom to recession, and as policy on retirement and pensions began to turn a corner, driven by an attempt at reconstruction that favored a liberalized market.

HALS gathered data from the same people on two occasions seven years apart. The findings suggest that there was indeed “slack” composed of able-bodied people in the early years following retirement, and that returning them to the labor market would have more than quadrupled the numbers in the 50–74 age group who were gainfully employed. Nevertheless, respondents in HALS reported advancing limiting long-term illness as they aged, and independent clinical measures suggested even greater deterioration of health with age. It seems that there are diminishing returns to any increase in effective retirement age. There is also evidence that the public associates loss of employment with reduced well-being. This applied even on retirement. In support of the same argument, women seemed to feel better in themselves when moving from home-making to employment. In summary, continuing employment beyond current retirement age impinges on years in which limiting long-term illness is likely to set in. Yet loss of employment removes some of the underpinning for a subjective sense of well-being.

Thane (22) suggests that the United Kingdom has a poor work–life balance. It needs to adjust this balance with advancing age. Reducing the adverse impact of relatively long working hours and some forms of work on health would allow effective retirement age to be extended. Protecting the employment and health of older workers would also take the pressure off young workers, who at present may be expected to assume senior responsibilities prematurely and often without the guidance of the most experienced. For women, such a change would relieve pressure in the 20s and 30s, when they are competing with young men in employment and yet may wish to have children. If this reversed the current decline in fertility, it would of course offset the tendency of the population to age, and so reduce the problem that an increase in retirement age is meant to solve.

Finally, there is evidence that a uniform rise in conventional retirement age would reinforce health inequalities within developed countries, not only between men and women, but also among social classes and among areas of the country that are thriving and areas that are depressed economically. That would run counter to the policy of reducing inequalities in health. If it were to swell the numbers who became physically or mentally dependent in old-old age, it could subvert any economic gains the policy might make.

In the United Kingdom, inequality in old age may be reinforced by the fact that the state can control only the basic and second-tier state pensions and the minimum income guarantee for those of pensionable age. It is in a better position to change the actual age of retirement of the lower-paid workers who depend on these state benefits than that of the higher-paid workers who have occupational and personal pensions. If the government infers that lower-paid workers needlessly resist saving from their income for personal and stakeholder pensions (rather than being unable to do so), it may feel justified in imposing a later retirement age on them. To allay this tendency to inequality, actual age of retirement, and the pension benefits that follow it, should be adjusted in favor of those who are most disadvantaged, especially by ill-health and disability. An implication of the health inequalities that would flow from increasing retirement age is that state pensions and benefits should be increased in order to protect the disadvantaged, not reduced as is the current trend. The disadvantaged should in many cases also be exempted from later retirement. The reductions in transfer payments and increases in revenue from taxes that later retirement among the higher paid would make possible should allow the government to fund such a positively discriminatory policy.

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#### REFERENCES

1. Watts, J. Ageing populace is killing economy, says study. *Guardian* (London), August 30, 2001.
2. Parsons, P. A. From the stress theory of aging to energetic and evolutionary expectations for longevity. *Biogerontology* 4(2):63–73, 2003.
3. Arantes-Oliveira, N., Berman, J. R., and Kenyon, C. Healthy animals with extreme longevity. *Science* 302(5645):611, 2003.
4. OECD Health Data, 2001.
5. U.N. Secretariat, Department of Economic and Social Affairs, Population Division. *Replacement Migration: Is It a Solution to Declining and Aging Populations?* ESA/P/WP.160. New York, 2000.
6. Coleman, D. A. Replacement migration, or why everyone is going to have to live in Korea: A fable for our times from the United Nations. *Phil. Trans. R. Soc. Bull.* 357(1420):583–598, 2002.
7. Coleman, D. A. *Who's Afraid of Low Support Ratios? A UK Response to the UN Population Division Report on "Replacement Migration."* OXPOP (Oxford Centre for Population Research) Working Paper 4. Oxford, 2000.
8. Banks, J., et al. *Retirement, Pensions and the Adequacy of Saving: A Guide to the Debate.* Institute for Fiscal Studies, Briefing Note No. 20. London, 2002.
9. De Deken, J. J. Pensions and the reduction of non-wage labour costs: Modelling a decade of reforms in Germany. *J. Eur. Soc. Policy* 12(4): 277–291, 2002.

10. Taylor-Gooby, P. Policy change at a time of retrenchment: Recent pension reform in France, Germany, Italy and the UK. *Soc. Policy Admin.* 33(1):1–19, 1999.
11. [www.heartstats.org](http://www.heartstats.org).
12. Bellaby, P. *Sick from Work: The Body in Employment*. Ashgate, Aldershot, 1999.
13. Karlsson, M., et al. An International Comparison of Long-Term Care Arrangements. 2004. [www.cass.city.ac.uk/media/stories/resources/Full\\_report\\_-\\_LTC.pdf](http://www.cass.city.ac.uk/media/stories/resources/Full_report_-_LTC.pdf).
14. Ginn, J., and Arber, S. Patterns of employment, gender and pensions: The effect of work history on women's non-state pensions. *Work Employ. Soc.* 10:469–490, 1996.
15. McDonald, I., and Donahue, P. Poor health and retirement income: The Canadian case. *Ageing Soc.* 20:493–522, 2000.
16. Cox, B. D., Huppert, F. A., and Whichelow, M. J. (eds.). *The Health and Lifestyle Survey: Seven Years On*. Dartmouth, 1993.
17. Blaxter, M. *Health and Lifestyles*. Routledge, London, 1990.
18. Bellaby, P., and Bellaby, F. N. W. Unemployment and ill health: Local labour markets and ill health in Britain 1984–1991. *Work Employ. Soc.* 13(3):462–482, 1999.
19. Bardasi, E., Jenkins, S. P., and Rigg, J. A. Retirement and the income of older people: A British perspective. *Ageing Soc.* 22:131–159, 2002.
20. National Statistics. *Trends in Life Expectancy by Social Class 1972–99*. 2002. [www.statistics.gov.uk/products/p8460.asp](http://www.statistics.gov.uk/products/p8460.asp).
21. Kemp, C. L., and Benton, M. The allocation of responsibility for later life: Canadian reflections on the role of individuals, government and employers and families. *Ageing Soc.* 23:737–760, 2003.
22. Thane, P. The work-life balance in an ageing society. *History and Policy*, 2002. [www.historyandpolicy.org/archive/](http://www.historyandpolicy.org/archive/).

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