

Chapter 2. The Importance of Malthusian Marriage

One of the unanswered questions concerning the recent past is the relationship between economic and demographic growth in eighteenth- and nineteenth-century England. The sudden spurt in population from roughly the middle of the eighteenth century, after a hundred years of minimal growth, is puzzling. The period of slow growth allowed for the accumulation of the infrastructure for industrialization, and the population explosion provided labour for industrial and colonial expansion. What were the reasons for the change in population dynamics?

In the hundred and forty years of continued speculation on this problem, between Darwin's reflections on marriage in 1838 and 1978, there were three major theories put forward to account for the change. The most popular argument, which became enshrined in 'demographic transition theory' and hence vastly influential in population analysis throughout the world, was that the determining variable was mortality. England conformed to the usual pattern observed in many developing countries. There were three stages. Up to the middle of the eighteenth century high fertility was balanced by high mortality. There were then improvements in health and the disappearance of plague. For a while high fertility continued, but the babies and young mothers ceased to die in such numbers and population soared. The balance was achieved over a hundred years later when fertility was brought down through the introduction of birth control. This seemed plausible enough, and since it was clearly what was happening in many other parts of the world, it was widely accepted.

In such a solution, the important topic to study is health and disease. Fertility is a biological constant and unimportant in explaining the change. The argument when applied to earlier periods

would be that the reason for continued drops in population after the Black Death was recurring outbreaks of disease. The reason why population was stagnant after the middle of the seventeenth century was the recurrence of further and new diseases. The implications are that this pre-industrial society was at the subsistence level and constantly bumping against Malthus' positive checks. England escaped first from 'the horsemen of the apocalypse' through a number of accidents and discoveries: the curious disappearance of plague, perhaps an improvement in child health through better diet and particularly the increased consumption of milk, the invention of vaccination, and the development of medical care in general.

This view has been the dominant one. The position in 1980 was much the same as it was in 1953 when H. J. Habakkuk wrote, 'Few generalizations are so well established in the books as that which ascribes the increase in the population of England and Wales in the second half of the eighteenth century to a fall in the death rate caused primarily by improvements in medicine, medical skill,' and public health.(1) Thus in 1968 J. Spengler could write that the increase in population growth rates in the eighteenth and nineteenth centuries 'seems to have been attributable mainly, if not entirely, to a decline in mortality.'(2) An example of this approach can be found in the widely read work of Thomas McKeown. An early article in 1955 with R. G. Brown provides the basis for a full-length treatment. McKeown concludes that 'when the modern rise of population is considered as a whole it is clearly a substantial reduction of mortality that has to be explained. (3) Unable to find an explanation in medical or public health improvements, McKeown suggests that despite massive urbanization and industrialization, the majority of the English population must have experienced a substantial improvement in nutrition sufficient to lead to a dramatic fall in mortality. Although there are no figures to show that this did, indeed, happen, it must have been so.(4)

The other, minority, theory was that the rise was caused by changes in fertility, a view McKeown strongly challenged. Such an interpretation was put forward by T. H. Marshall in 1929, when he argued that 'so far as the Malthusians are concerned, it is evident that ...

1 In Glass, *Population*, 269 .

2 'Historical Population', 434.

3 McKeown, *Population*, 43.

4 A plausible case for linking a European decline in mortality to changes in public health is argued by Kunitz, 'Mortality'.

they were absolutely right to regard the birth rate as the key to the situation.' Marshall states that a rise in the economic value of children and a drop in constraints to stop servants and apprentices from marrying may have brought down the age at marriage. (5) This view was supported by Habakkuk in two articles. In 1953, while admitting that detailed parish register evidence still awaited analysis, he argued along the same lines as Marshall: new economic opportunities and resources could have led to a fall in the age at marriage, which in turn could account for the 'Major part of the population increase. Habakkuk quoted K. H. Connell to the effect that 'the question of the age at marriage is at the heart of Irish population history', and added that 'this is probably true of most other pre-industrial societies.'(6) If this were the case it would have enormous implications. If a fall in mortality rates is the main cause of population increase, then 'it is reasonable to consider whether the Industrial Revolution was a response to the challenge of increasing population.' If, on the other hand, the rise of population was 'primarily a consequence of an increased demand for labour, we must look elsewhere for the mainsprings of economic change in this period. (7) Attacked by McKeown and Brown, Habakkuk was thrown on to the defensive, though maintaining his general position in an article in 1958. 'I am not convinced that we must at this stage reject the possibility that a fall of two or three years in the age at marriage, plus some increase in nuptiality, could have caused an acceleration of the rate of growth of the sort we observe in the later eighteenth century.' Yet his lack of confidence is shown in the next sentence: 'The much more doubtful question is whether there were in fact changes in age at marriage of this order of magnitude.'(8)

Thus there was a stalemate, neither side able to show, in the absence of detailed evidence, that their theory was correct. Who was right, the eighteenth - century writers, who tended to ascribe the upsurge of population to changes in fertility, or the majority of later historians who on the whole thought that mortality was the crucial factor?

There were major objections to the eighteenth - century view of the crucial role of fertility. First, such a phenomenon - that is, the very rapid build-up of population being caused by changes in fertility - had nowhere else been observed. Many modern and past societies

5 In Glass, *Population*, 267; 260-1.

6 Ibid., 275.

7 Ibid., 271.

8 Ibid., 153; see also 154.

could be shown to have rapidly increased their population through a planned or accidental drop in death rates, but few if any through a rise in the birth rates, as McKeown pointed out.⁹ Secondly, it was also argued by McKeown, from the analogy with Ireland, that 'an advance in mean age of wives at marriage of about 5 years would be needed to reduce the mean number of live births by 1.'¹⁰ Thirdly, a logical objection was voiced by Dr Johnson. When it was mentioned that Russia was likely to become a great empire because of the rapid increase of population, Johnson replied, 'Why, Sir, I see no prospect of their propagating more. They can have no more children than they can get. I know of no way to make them breed more than they do.' When Boswell countered by asking, 'But have not nations been more populous at one period than another?', Johnson answered, 'Yes, Sir; but that has been owing to the people being less thinned at one period than another, whether by emigrations, war, or pestilence, not by their being more or less prolific. Births at all times bear the same proportion to the same number of people.'¹¹ This was written in 1769, just as the great burst in population was under way. As Johnson looked around him, he concluded that it was impossible to increase fertility and that Malthus' positive checks, famine, war and pestilence, or emigration, were the forces determining population growth.

Thus, while there were those who saw the phenomenon as a combination of changes in mortality and fertility, the major consensus and the weight of historical and local evidence lay with those who believed that the solution lay in the elimination of Malthus' positive checks. What has happened in the last few years has been a complete overturning of the argument. Before looking at the very considerable implications of this historical reversal, we may look at how it has been established. It has occurred in two stages, the first in two articles in 1965 and 1966. In the first article, John Hajnal outlined the 'European marriage pattern in perspective'.¹² He showed that Western Europe, since at least the sixteenth century, exhibited a curious and possibly unique marriage pattern. The two central features were a very late mean age at first marriage for women, often at 25 years of age or over, and a very large proportion of never-married females, often up to fifteen per cent or more. This (selective' marriage is just as unusual as late age at marriage. Such a pattern separated off those countries in Europe west of a line drawn

9 McKeown, *Population*, 42-3.

10 In Glass, *Population*, 297; McKeown, *Population*, 38.

11 Hill, *Life of Johnson*, ii 101-212

12 Hajnal in Glass, *Population*.

from Trieste to Leningrad from countries to the east. It was a very different pattern from that found in contemporary Africa, Asia and other parts of the Third World. What, in effect, Hajnal had shown was that fertility was not biologically but socially determined; that there was a gap of ten years or more between sexual maturity and reproduction, and that many never married at all. This important finding was quickly corroborated and examined minutely in an article by E. A. Wrigley. (13) This demonstrated that English women's marriages had indeed been very late; in Colyton, Devon, the mean age at first marriage fluctuated between 26 and 30 in the period 1560 1750. Wrigley's article also showed that, within marriage, marital fertility was relatively low, so low at certain times that he suspected that his Devonshire families were controlling their fertility by the use of some form of birth control.

Unfortunately, it has not yet been possible to show definitely when this pattern of late and selective marriage began. Hajnal thought that it probably did so sometime between 1400 and 1650, but the evidence he put forward, and that of others who are forced to work indirectly from the records of manorial courts, or court rolls, is inconclusive. Poll taxes and other early documents are extremely difficult to interpret, and we cannot be certain about female age at marriage. It remains true that 'there is no convincing evidence to show the age at which medieval women married.' (14)

These two articles removed the logical objection of Dr Johnson, for it was clear that by changing one or more of the three factors (age at marriage, proportion marrying or marital fertility), people could indeed be 'more prolific'. Nor did there have to be such a dramatic shift in age at marriage as McKeown argued: his demographic analogies appear faulty. (15) This explains how we do, in fact, find that a much smaller change in age at marriage in England had a significant effect on fertility. The first objection, however, remains. If it can be shown that it was a rise in fertility that accounted for the population growth, this would indeed make England unusual. It is one matter to show that fertility could have been the important factor; it is another, as Habakkuk pointed out, to prove convincingly that it was.

That we are now in a position to resolve these questions, among the most important and contentious facing historians, is largely due to the work of the Social Science Research Council Cambridge Group for

13 Wrigley, 'Family Limitation'.

14 Hajnal in Glass, *Population*, 122; Macfarlane, *Individualism*, 158.

15 Schofield, 'Review', 180.

the History of Population and Social Structure. During the last twenty years they have reconstructed the population history of England through two separate procedures. They have worked out methods of 'back projection' which enable the historian to calculate fertility and mortality rates back to the sixteenth century, from aggregate figures derived from parish registers. This is complemented by the intensive study of parish registers through 'family reconstitution', that is, the linking of baptisms, marriages and burials, so that it is possible to work out ages of mothers at marriage, when giving birth, and at death. During the last four years the results of this work have been published, and it has transformed our understanding of the causes of these puzzling relations. We can now see that the unexpected solution is the right one.

We may briefly summarize the conclusions of the work of Schofield and Wrigley which has finally settled the argument. They have discovered that there was little change in the levels of marital fertility over time. The number of children conceived in each year of marriage hardly varied over the sixteenth to eighteenth centuries, and can consequently be discarded as a major solution to the puzzles we are investigating. (16) Throughout the centuries, when compared to France or Sweden, English marital fertility was surprisingly low, but that is another problem. What did change dramatically were the two features first stressed by Hajnal. The proportions never marrying dropped at the beginning of the eighteenth century. Schofield and Wrigley calculated that in the second half of the seventeenth century as many as 22.9 per cent of the population of both sexes between 40 and 44 years of age were still not married. There was a great change in the "second half of the eighteenth century, when the equivalent figure was about 9 per cent not married: a change from about a quarter of the population to one tenth.(17) Thus one important difference in the pattern was the fact that one had moved from a Stuart England where many never reproduced themselves to a Georgian England where most people did so.

Yet the heart of the eighteenth century shift lay elsewhere - namely, in the drop in the age at which people reproduced themselves. In essence, the change hardly looks dramatic. Wrigley tells us that 'during the period in which intrinsic growth rates rose

16 Wrigley and Schofield, 'Population History', 168.

17 Ibid., 176, originally put the figure at '9%', but Schofield now thinks a 'minimum of 9% is probably nearer the mark' (personal communication); see also the dramatic graph in Outhwaite, *Marriage*, 151.

from zero to 1.67 per cent per annum ... age at first marriage of women fell by about three years.' The drop was from a mean age of 26 to a mean age of 23.18 Both ages are by many countries' standards very high, and the modification may appear slight. But in the right circumstances, when mortality is relatively low and when it is combined with an increasing proportion marrying, this is enough to have a significant effect on population growth rates. 'Since the middle twenties is in the period of peak fecundity for women, a fall of three years in marriage age is sufficient to make a substantial difference to over-all fertility.'(19) The author estimates that 'the changes which occurred in marriage and marriage -related behaviour in the course of the eighteenth century were sufficient to have raised the annual rate of growth of the population from zero to 1.26 per cent, even though there was no change in either mortality or age-specific marital fertility'; hence he is able to argue convincingly that 'about three-quarters of the acceleration in the growth rate which took place over the period is attributable to the increase in fertility brought about by changing marriage behaviour.'(20) The other quarter he ascribes to possible changes in mortality.

One of the associated features of this change, which has led us to talk of 'age of reproduction' rather than age at marriage, is the link with illegitimate and pre-nuptial conceptions. It might have been expected that, as stiff controls which prevented many from marrying and delayed the marriages of others were relaxed, the pent up reproductive energies which had occasionally found outlets in bridal pregnancy and illegitimacy would diminish. The contrary happened. 'Age at marriage fell and with it the proportion of men and women who never married, and yet at the same time illegitimate fertility rose sharply and the proportion of pregnant brides also increased. (21) This was very different from France, for example, where as marriage age was delayed, 'there was some tendency to more widespread liaisons outside marriage, as if there were a pent-up pressure. (22) In England

18 Wrigley, 'Population', 131; Wrigley in Outhwaite, *Marriage*, 148.

19 Wrigley in Outhwaite, *Marriage*, 148-9.

20 Ibid., 171. Two articles in the *Journal of Family History* in late 1984/1985 by Roger Schofield and David Weir add to our understanding of the relative contribution of changes in proportion married and age at marriage, showing that celibacy was more important up to the eighteenth century and age at marriage thereafter. I am grateful to Tony Wrigley and Roger Schofield for references to this work.

21 Wrigley in Outhwaite, *Marriage*, 146 .

22 Ibid., 179-80.

'whatever constrained men and women to marry late also constrained them to avoid extra-marital intercourse, but when earlier marriage was countenanced, inhibitions on intercourse outside marriage were also relaxed. (23)

We have learnt several important things as a consequence of these discoveries. We know that England, during the sixteenth to nineteenth centuries, exhibited a particular kind of self-correcting, homeostatic regime connecting wealth and population. Instead of population immediately expanding up to the maximum that resources would allow and then being cut back, a comfortable margin was left by the working of the institution of regulated marital fertility. There was a gap which allowed considerable capital accumulation with little population growth, and which also slowed down growth when resources began to be stretched. This was linked to a second feature - what Wrigley calls a 'low-pressure' equilibrium. This had two characteristics. On the one hand, both mortality and fertility were below the maximum for many centuries. This was made possible by controlled fertility. In societies 'where fertility was high, mortality was of necessity also high.' But in England, where fertility was lower, mortality could also stabilize at more modest levels, as Malthus had earlier pointed out.(24) Such a lower-level equilibrium also led to advantageous effects on standards of living. 'A low-pressure equilibrium between population and the resources available to sustain it was consonant with relatively high standards of living. A high-pressure equilibrium was inevitably one entailing for the bulk of the population a life lived close to the margin of existence. (25) In this respect England was different from other traditional societies and other countries in western Europe at the time. (26) In a lengthy comparison with France, Wrigley shows that the fertility and nuptiality patterns of the two countries were very different in the eighteenth century: 'the contrast between the history of marriage in England and France in this period is remarkable.' It was thus not mortality 'which appears to have distinguished England from other countries so much as her fertility history'.(27)

Above all we know that the crucial variable was marriage and associated sexual behaviour. Thus marriage now emerges holding

23Ibid., 146.

24 Wrigley, 'Population History', 209; Malthus, Population, i, 240

25 Wrigley, 'Population History', 209.

26 Wrigley and Schofield, 'Population History', 184 .

27 Wrigley in Outhwaite, Marriage, 174-6.

the centre of the stage', for the 'changes in nuptiality in England in the early modern period were on a large enough scale in themselves to move population growth rates between the minimum and maximum to be found in pre-industrial societies. (28) Marriage and the family system become of central importance in helping us to understand the unique and early development of England. As Wrigley points out, the work of Hajnal and Laslett had suggested in the 1960s 'the possibility that the pre-industrial west European family pattern - late marriage for women, a large proportion of women of childbearing age remaining unmarried, a separate household at marriage, small households comprising only a single conjugal family - was unique among all traditional societies'. This meant that the study of the family became of central importance.

'Was it a key to the understanding of the transformations of the eighteenth and nineteenth centuries? If it was not the industrial revolution that had produced the modern conjugal family system, might it not have been the existence of an unusual complex of marriage and co-residential patterns that helped to produce the radical economic changes of the industrial revolution period?'

The connection is not merely temporal. It is possible to see how the homeostatic, low-level equilibrium structure of England could actually encourage, or at least not extinguish, economic growth.

'A pre-industrial society in which overall fertility is comparatively low because women marry late is one in which a comparatively favourable balance between population and productive capacity is attainable. Once attained, it is easier to sustain where age 'at marriage is sensitive to economic and social circumstances and not largely determined by a biological event such as menarche. Higher real incomes imply a different structure of demand and a greater chance of provoking the type of changes that precede and accompany an industrial revolution.' (29)

A set of long-standing puzzles has been solved and the solution has important implications. Yet, as Wrigley points out, in solving these a fresh set of problems has been raised. We now know that what needs to be explained is the pattern of marital and sexual relations which allowed population to behave in this way. We know that English

28 Wrigley, 'Population', 133.

29 Wrigley, 'Reflections', 76-7

society was so constituted that at times of low over-all fertility every aspect of the reproductive career of women up to the point of marriage was conducted conservatively.'⁽³⁰⁾ But how, exactly, was it so constituted, and why? Until we have an answer to this, we will not be able to answer the many new questions now thrown up: 'Why should nuptiality have increased so remarkably in eighteenth -century England? Why should illegitimacy and prenuptial pregnancy have such a distinctive relationship with nuptiality? And why should what is observable in England have contrasted so markedly with the parallel phenomena in France in the same period?'⁽³¹⁾

Thus what now faces us as a central problem is the nature of the English pattern of marital and sexual relationships, and above all how the decision to reproduce was reached, either through marriage or outside marriage. Before embarking on analysis of this we may accept three further pointers from the work of Wrigley and Schofield. First, it is obvious that there is a relationship between decisions to reproduce and real income. It is argued that 'there was a tight relationship between the secular behaviour of prices and the rate of population growth from the sixteenth century until about 1800. ⁽³²⁾ Furthermore, 'there is evidence that the secular changes in nuptiality which took place ... were closely associated with the secular trends in real wages, with the former taking place some 20-30 years later than the latter.'⁽³³⁾ But, as Wrigley states, even if a relationship is demonstrated, this does not explain 'how economic changes became transmuted through social norms in a manner which resulted in an "appropriate" change in individual decisions about marriage and reproduction both within and outside marriage . A particular problem is the lag of twenty years or so.

A second important suggestion is that we are dealing with a long-enduring pattern and that we need to look for a solution in the effects of enduring rules rather than changes in the rules themselves. At first, when the dramatic change of the mid-eighteenth century was pinpointed to changes in fertility, it seemed attractive to believe that this reflected some massive transformation in -social structure or in the nature of marriage. One appealing argument was that as the labouring groups, those dependent entirely on wages, increased as a proportion of the population, so a hitherto minority pattern of early

30 Wrigley in Outhwaite, *Marriage* 184.

31 *Ibid.*, 183.

32 Wrigley, 'Population',136. Wrigley in Outhwaite,*Marriage*,183

34 *Idem.*

marriage became dominant. Thus changes in fertility reflected the growth of proletarianization. (35) Wrigley, however, points out that 'the downturn in nuptiality in the early nineteenth century', which seems to have once again reflected a downturn in real wages, 'is fatal to this viewpoint since proletarianization went forward steadily.'(36) Nor is there evidence of a major shift in the nature of marriage itself or of its relations to economics. Thus 'there appears to have been a substantial uniformity of reaction to changing real income trends between the sixteenth and nineteenth centuries.'(37) When trying to explain the shift in the middle of the eighteenth century Wrigley comments that 'it is highly probable that this did not reflect any major alteration in the way in which young people made their decisions to marry, to delay marriage or to remain single, but that instead the inducements to marry grew steadily greater and the disincentives less with rising real incomes over a period which lasted more than a century.'(38) In other words, it is possible that between the sixteenth and nineteenth centuries, and possibly earlier, we are looking at a framework of decision-making, a set of rules and customs, which remain broadly the same. What changes is the outcome produced by these rules in differing economic circumstances. *Prima facie*, this makes sense; it does not need a radical change in the structure and nature of marriage to change a mean age at first marriage for women from 26 to 23.

The final suggestion links the former two and provides a possible explanation for the difference between the English pattern on the one hand, and the French and Swedish on the other. In the continental variety, 'it is tempting to see in the nuptiality history . . . a "peasant" variant', while in England one has a 'wage' variant. 'In the former the number of viable holdings might be supposed to be growing less rapidly than the population, which might make matches harder to make, while in the latter a system of "ecological niches" had given way to one in which current and prospective earnings had replaced access to land as a criterion for eligibility to marry.' This, Wrigley states, is merely 'speculation', an 'hypothesis to be tested'.(39)

Solutions to the problem of how the Malthusian regime worked and when it became established have not only an historical but also a present-day significance. Rapid population growth is one of the

35 Levine, *Family Formation*.

36 Wrigley, 'Population', 144.

37 *Idem*.

38 *Ibid.*, 148.

39 Wrigley in Outhwaite, *Marriage*, 183.

gravest threats to world resources and peace. In the period between about 1950 and 1975 the population trends in the Third World led to extremely gloomy forecasts. Many governmental and other attempts to bring down fertility to match the lowered levels of mortality through family planning campaigns were failing, and a large literature arose to show why such schemes would be unlikely to succeed.⁽⁴⁰⁾ Then an extraordinary thing happened. In a growing number of countries, fertility rates started to drop. Rather like the strange fertility transition which occurred throughout most of Europe in the period 1870-1915, this change occurred across ethnic, religious, political and other boundaries. It was noticed particularly in islands (Mauritius, Taiwan, Japan, Sri Lanka) and in 'Confucian' cultures - Singapore, Taiwan, parts of Thailand, for example, and later, dramatically, in China.⁽⁴¹⁾ But it also started to occur in large land-locked states, in Catholic as well as Protestant countries (for example, certain countries in South America). The one major exception, where fertility rates rose rather than declined, was sub-Saharan Africa. Like the fertility transition within Europe, the reasons remain a mystery. There is no obvious association with sociological or economic variables. In both cases it looks as if some kind of 'fashion' has changed. But it became apparent that in fact the fertility changes were due to two major changes - a Malthusian revolution to late age at marriage, and a neo-Malthusian one to contraception.

Using a simple model developed by the demographer Matras, we can point to four major types of fertility regime⁽⁴²⁾

		Fertility	
		Uncontrolled	Controlled
Marriage	Early	A	B
	Late	C	D

In Western Europe today we employ D, though sometimes reverting to B. It was expected by many that when the hoped-for demographic transition occurred in the Third World it would involve a direct move from A to D. This has indeed sometimes happened - as with the massive campaigns in China where there has been some

40 Davis, 'Population Policy'.

41 Maudlin, 'Family Planning'; Tabah, 'Population'.

42 Cited by Spuhler in Zubrow, *Demographic Anthropology*, 211.

success in moving a quarter of the world's population in a few years from A to D, by way of late marriage and one-child families achieved through contraception and abortion. But equally common is the move from A to C, which may have a similar effect, but probably arises from different causes.

A brief summary of what is happening is provided by Ansley Coale. He points out that there is a 'Malthusian element in current population trends that is usually overlooked. The preventive check of 'moral restraint' that Malthus proposed is contributing very significantly to the reduction in human fertility occurring in the past 10 or 15 years in the third world. He notes a significant rise in the age at marriage leading to a drop in fertility in Morocco, Tunisia, Kuwait, the Central Asian Republics of the Soviet Union, Sri Lanka, Singapore, Malaysia, Hong Kong, Taiwan, Korea and China. He cites, as an example, Korea. There, over the period 1930-75, the overall fertility declined by approximately a half, the birth rate dropping from 43 to 23 per thousand. This was due more to the rise in the age at marriage than to birth control; the proportion married among women of childbearing age declined by 33 per cent, and marital fertility decreased by 23 per cent. The decline in the proportion married among women aged 15 to 50 was 'wholly the result of a very large increase (from 16 to nearly 24 years) in age at first marriage.'⁽⁴⁴⁾ Coale notes that in Taiwan the mean age at first marriage rose from 18 in 1905 to 23 in 1970, in Sri Lanka from 18 in 1901 to 25 in 1975. The difficult case is China, for which little information was then-available. Coale's hunch, based on fragmentary reports that there had been a substantial rise in the age at marriage there, now appears confirmed, and consequently the 'rising age at marriage has been as important as birth control in reducing Chinese fertility.'⁽⁴⁵⁾ If this is true, then Coale concludes that the Malthusian preventive check (later marriage) 'has been as effective in contributing to the recent reduction in the birth rate in the third world as the much more publicized spread of "family planning". Yet this has gone so totally unnoticed that there has been little speculation on the reasons for the change.

From the work of Malthus and certain recent demographic and economic historians we can draw certain conclusions. The relation-

43 Coale, Malthus, 10.

44 Ibid., 11.

45 See recent issues of *Population and Development Review*.

46 Coale, 'Malthus', 12.

ship between economic growth, and population trends is central to an understanding of European economic growth and particularly the remarkable upsurge of wealth and productivity in England in the eighteenth and nineteenth centuries. An important distinguishing feature of Europe, the pivot on which the system turned, was the flexible marital regime, which allowed population to adjust to economy. Malthus had shown that population will tend to grow rapidly even before there is any economic growth; it will destroy any chance of a rise in the standard of living, since it will increase as soon as mortality loosens its grip. Such population expansion will also make economic growth more difficult through the law of diminishing marginal returns on further labour input. What was needed was a breathing space. 'The constant effort towards population, which is found to act even in the most vicious societies, increases the number of people before the means of subsistence are increased.'

This produces a negative spiral. Food becomes scarcer, the poor 'consequently must live much worse, and many of them be reduced to severe distress'. Then wages fall, with a superabundance of labour. This leads to a fall in population, through 'the discouragements to marriage and the difficulty of rearing a family'.⁽⁴⁷⁾ What was needed was a situation where, instead of population growing rapidly and being held in check by 'misery' or 'vice', a set of tastes and institutions could be created which would induce people to pursue other than biological goals. A game needed to be devised in which there would be prizes of different sizes, assured by the firm system of government - prizes that people really wanted. This game is known to us as capitalism. Whatever its costs, Malthus believed that its benefits recommend it to us.

What, in effect, Malthus and his followers have done is to isolate a problem. In the 'natural' situation, fertility is uncontrolled and is held back by two major mechanisms. Either there is high perennial mortality, particularly of infants, which contains population. Or, more usually, there is a wave-like movement with population climbing moderately rapidly and then being savagely cut back by a 'crisis', usually the pestilence and famine associated with war. This latter 'crisis' pattern has been observed from India, China and much of Europe until the middle of the eighteenth century.⁽⁴⁸⁾ In such situations it is the control of perennial and crisis mortality, often by

47 Malthus, *Population*, i, 15.

48 Macfarlane, *Resources*, 304ff.

such indirect measures as the institution of peaceful government or good communications, which causes population to explode. Any improvement, in food, technology or other factors, would quickly, as Malthus argues, be absorbed. These are what Wrigley would call 'high-pressure' regimes. They make it extremely difficult to accumulate in the long term and they tend to force down the living conditions of the masses. By an accident whose nature and causes we do not yet understand, England seems to have escaped from this 'natural' situation by at least the sixteenth century. It had escaped into a 'low-pressure' regime, much more like that of present-day 'post demographic transition' societies. That is to say, both fertility and mortality were well below their theoretical maximum and were more or less balanced. Such a homeostatic situation has been observed in some simple hunting-gathering societies and among certain species of animals, and became widespread in Europe in the nineteenth century. There are now signs that it is developing in parts of the Third World, particularly in South-East Asia. Yet it is so generally unusual that it is very tempting to link it to other well known unusual features of the society - a precocious growth of industry, urbanization and democracy.