



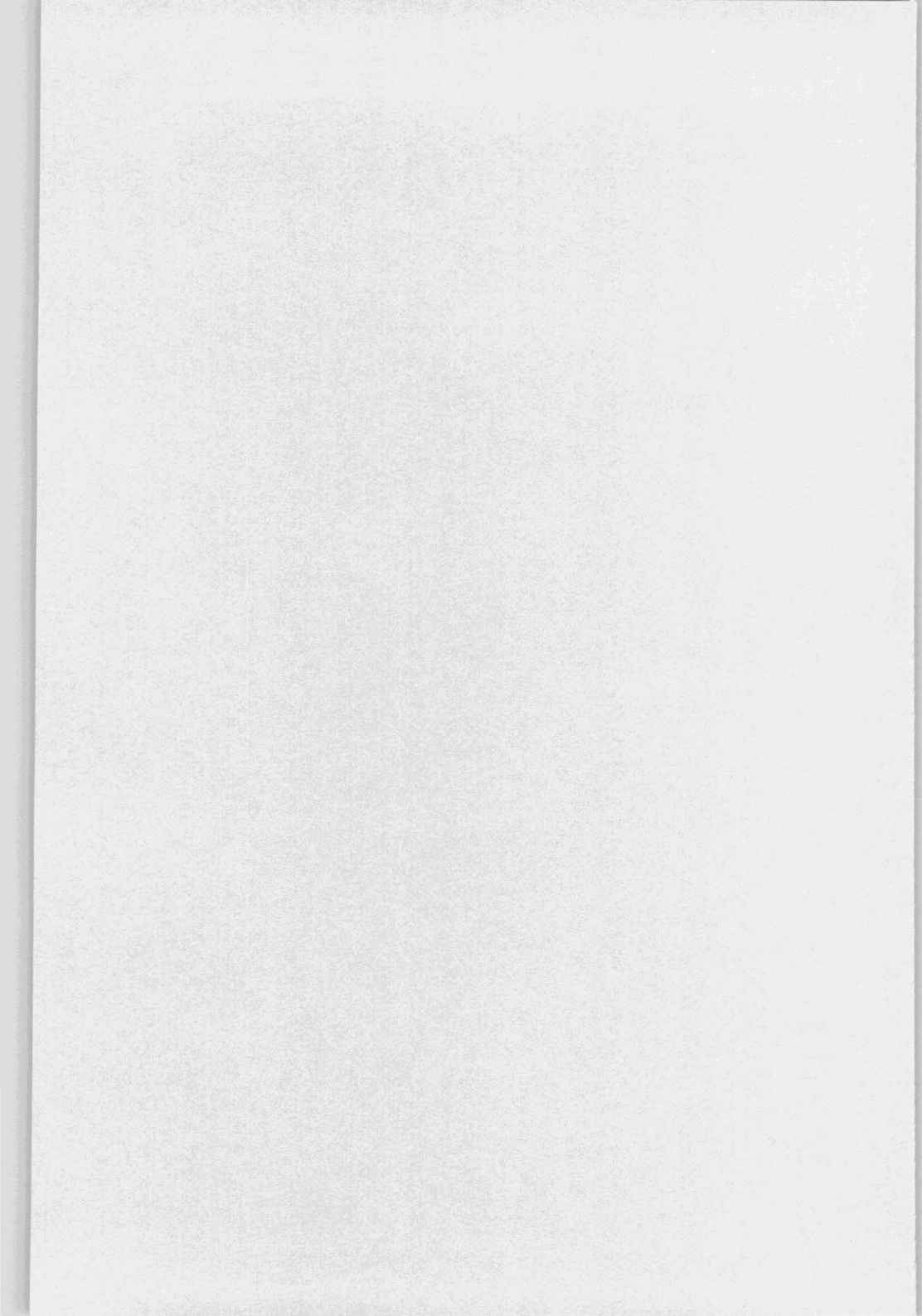
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**THE 'QUALITY OF LIFE': LESSONS FOR AND
FROM THE BRITISH INDUSTRIAL REVOLUTION**

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the British Industrial Revolution**

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I. Introduction

Recent commentaries on the standard of living debate have stressed the need to move beyond the measurement of real wages and have anticipated renewed emphasis on issues relating to the quality of life (Lindert and Williamson, 1983; Engerman, 1994). Interesting quantitative results have been obtained relating to the value of improvements in mortality (Williamson, 1984), to the cost of disamenities associated with urbanization (Williamson, 1990a) and to trends in heights (Floud et al., 1990).

While useful and important, these studies have a number of limitations. Clearly, important aspects of the quality of life such as education, political/civil liberties and freedom from fear of deprivation are ignored. Both the Williamson items rely on strong assumptions to establish tradeoffs between aspects of the workers' environment and consumption while height is not an argument in a conventional utility function and research in this area has still to confront the conceptual problems of combining information on heights and real wages in a welfare index. Nor do these results easily allow a comparative perspective on British living standards during the Industrial Revolution.

In this paper I wish to consider another way of approaching these measurement issues which takes a broader view of the quality of life, embodies an explicit approach to aggregation and places the standard of living debate firmly in the context of current economists' discussions of living standards in industrializing countries. The basic approach proposed below is reasonably flexible and may well be capable of considerable further extension. The implementation here should be considered preliminary and is partly conducted with a view to direct comparison with the results obtained by the method's originators.

This notion of the quality of life is closely linked to the human development approach to measuring living standards which in turn assesses well-being by looking at capabilities rather than just incomes. Clearly, there may be policy implications arising

from this, in particular with regard to public spending which would not be accepted by an income-centred approach, and some countries do much better in comparisons based on human development than on real GDP/person (Anand and Ravallion, 1993).

Informed by the recent quality of life literature, the following questions are addressed.

- (i) What does a quality of life approach imply about changes in aggregate living standards during the British industrial revolution?
- (ii) On a comparative basis, what aspects of the quality of life appear particularly unsatisfactory in mid-nineteenth century Britain?
- (iii) How good is the correlation between levels of real GDP/person and the quality of life in the 'advanced world' of the mid-nineteenth century?
- (iv) What, if any, policy recommendations might the quality of life approach have suggested for the improvement of British living standards during the industrial revolution?

In examining these questions, I hope not only to contribute to the classic standard of living debate but also to point to problems in developing human development indices.

II. Dasgupta and Weale on Measuring the Quality of Life

Dasgupta (1993) is already established as a milestone in the investigation of the concept and measurement of the standard of living. He concludes that as far as socioeconomic indicators are concerned real income should be supplemented by measures of education and health which are important constituents of a person's well-being but access to which often results from government decisions rather than market transactions (Dasgupta, 1993, pp. 76-7). Dasgupta also emphasizes that, as a result of relatively modest public health expenditure, citizens in countries such as China and

Sri Lanka have life expectancies at birth only a little below the American level despite living in much poorer countries (Dasgupta, 1993, pp. 92-3).

Dasgupta also argues that it is important to extend the concept of well-being to include rights in the political and civil spheres (1993, p.107) and in this there is a clear echo of the approach taken to the standard of living debate by radical writers like Thompson (1963). The inclusion of political and civil rights broadens the concept of the quality of life beyond that considered in the human development index of the United Nations.

In Dasgupta and Weale (1992) this basic approach to evaluating well-being is implemented in a comparison of living standards in poor countries in the 1970s. Six aspects of the quality of life are identified, namely, per capita income, life expectancy at birth, infant mortality rate, adult literacy rate, and indices of political and civil rights. Measurement is carried out on an ordinal basis partly because this readily permits inclusion of available indices of political and civil liberties but mainly because of poor data quality. The Borda Rule provides a way of aggregating such ordinal data and can be thought of as a social welfare function. This ranks each observation on each criterion and then sums its scores to obtain an aggregate score on which its Borda ranking is then based.

In this approach life expectancy is taken to be an important component of utility in its own right whereas infant mortality is seen as a good way to index vulnerability to the health risks early in life which are also likely to be captured by data on adult heights. Height per se is not taken to be a component of utility. The difficult process of estimating willingness to pay to escape risks to health and longevity is obviated but the concerns which motivated the research of Williamson (1984) (1990) and Floud et al. (1990) are addressed. Standards of education and literacy featured in the famous discussion between Hartwell (1963) and Hobsbawm (1963) but in the context of the

standard of living debate have been neglected since, perhaps because of problems of assessing the consumption value of schooling.

Dasgupta and Weale (1992, p. 120) use indices of political and civil rights judgmentally assigned on a scale of 1 to 7 and taken from Taylor and Jodice (1983). These attempt respectively to measure "the extent to which people are able to play an active and critical role in the choice of their leaders" and "the extent to which people are openly able to express their opinions without fear of reprisals" (Taylor and Jodice, 1983, p. 50). Political liberty is the sole concern of the political rights index while freedom of the press and independence of the judiciary are the central ingredients judged in the civil rights index (Taylor and Jodice, 1983, pp. 61, 64). Precise definitions are given in the appendix. Clearly, other researchers may wish to approach the question of rights differently but this method does focus on fundamental Anglo-American beliefs.

It might indeed be argued that in the early stages of economic development many citizens are more concerned with entitlements to rights in terms of protection from serious hunger rather than liberties. Given that market failures preclude private insurance as an adequate response to this concern, the system of social security is central to the protection of this wider concept of rights (Burgess and Stern, 1991) and the Dasgupta and Weale index could be expanded to include this aspect which again depends on government decisions rather than market transactions. With this perspective, as recent analyses have recognized (Boyer, 1990), changes in the administration of the Poor Law would be an important aspect of living standards during the Industrial Revolution.

As Dasgupta and Weale remark (1992, p. 122), the simplicity and transparency of the Borda Rule make it an attractive method to use. Nevertheless, the approach relies on assumptions which may be objectionable in some circumstances. Two related points should be noted. First, equal weighting is given to each of the variables which is

included. Second, any information of a cardinal nature, for example on trade-offs between the components of well-being, which may exist is discarded.

III. Applying Dasgupta and Weale's Method to Britain in the Industrial Revolution

Dasgupta and Weale (1992, pp. 121, 123) report calculations of their Borda Rule measure for 48 poor countries in 1980. In this section, data are assembled on a comparable basis for Britain in benchmark years familiar from the standard of living debate. The aim is to provide a perspective both on changes in the quality of life over time in Britain and also to compare Britain with its international peer group at the end of the standard of living debate period. In addition, the Dasgupta and Weale index is broadened to include the system of poor relief. Data for life expectancy and literacy are taken from the obvious, well-known sources listed in Table 1; the remaining estimates require some discussion.

Maddison (1995) provides estimates for UK GDP per head for 1820 based on obtaining a purchasing power parity adjusted estimate of 1992 income and working backwards using growth rates for GDP. In order to make comparisons with Dasgupta and Weale's dataset, Maddison's estimate was converted into Summers-Heston dollars of 1980 and, to obtain figures for Britain, Ireland was taken out on the basis proposed by Maddison (1991, p. 220). Income levels for other years were worked forward or back from 1820.

It is well-known that detailed evidence on infant mortality in Britain prior to civil registration of deaths from 1837 is relatively sparse, although the broad outline of developments is quite widely agreed (Huck, 1994). The best available national estimates are those recently provided by Woods (1993). He assumes that the infant mortality rate is related to life expectancy at birth as in a model life table according to the equation $IMR = 1024.80 - 543.71(\log e_0)$ and obtains estimates of IMR for the eighteenth and early using Wrigley and Schofield (1981) for e_0 . Woods (1993, pp.

197-200) provides an array of supporting evidence to suggest that this procedure gives plausible results and, *faute de mieux*, I have adopted them for Table 1.

Dasgupta and Weale (1992) use the rankings for political and civil rights given in Taylor and Jodice (1983). No similar indices have been proposed for eighteenth and nineteenth century Britain but it is perfectly possible to judge the state of affairs against the same criteria.

The key to being coded 1 or 2 for political rights is the ability of a wide electorate to vote a leader or party out of office, with a 1 awarded if the great majority of persons can participate in the electoral process. The very restricted franchise both before and after the Reform Act of 1832 clearly rules out a 1 (O'Gorman, 1989). Consideration of the operations of parliament and the nature of the 'party system' before the Second Reform Act of 1867 also seems to rule out a 2 since governments were sustained or defeated in parliament and were not determined by popular vote in general elections (Hawkins, 1989). On the other hand people could vote for their representatives in regular elections even if, to modern eyes, the procedures appear to have been non-democratic. A 3 seems justified throughout the period covered by the standard of living debate.

Assessing an appropriate score for civil rights is much harder and the situation was much more changeable. By the later eighteenth century it may be reasonable to speak of the independence of the judiciary (Manchester, 1980) but the effectiveness of the press was severely limited by both taxation and the notion of seditious libel (Aspinall, 1949; Wickwar, 1928). The period between the French Revolution and the later 1820s should be seen as one of repression reflected in the Combination Acts, increased pressure on the press (for example, the 'six Acts' of 1819) and the use of the military to suppress popular disturbances with 12000 troops used against the Luddites in 1812. This period should surely be no more than a 3 while a 1 seems inappropriate before

the flowering of a popular press able to use the defence of truth against a charge of criminal libel available after 1843 (Aspinall, 1949, p.384).

Boyer provides an appropriate overview of trends in poor relief and sees a shift towards greater generosity from around 1750 to the famous Poor Law Amendment Act of 1834 then followed by a decline in generosity. Real per capita relief expenditure grew at 1.4 per cent per year between 1750 and 1820, fell at 0.3 per cent per year to 1834 and then at 1.2 per cent per year through 1850 (1990, p. 29, 204). Up until the 1820s various forms of outdoor relief were developing and the Poor Law increasingly operated as an effective system of unemployment insurance while in crisis years shielding landless labourers from starvation.

After 1834, the law established the principle of indoor relief for the able-bodied but this was widely resisted and only very slowly implemented prior to 'the crusade' of the 1870s with only 13 percent of able bodied paupers inside the workhouse as late as 1865 (Mackinnon, 1986). With regard to ranking years in terms of provision of social security as in Table 1, the main question is how low to place 1850. In the light of this recent research, a reasonable answer seems to be above 1780 but below 1800.

Table 1. Living Standards Indicators in Industrial Revolution Britain Compared with 1980 Third World

	Y	E	M	L	R ₁	R ₂	SS
Britain							
1760	1103	34.2	191	49.0	3	2	6
1780	1093	34.7	187	48.5	3	2	5
1800	1184	35.9	179	52.0	3	3	3
1820	1284	39.2	158	52.5	3	3	1
1830	1351	40.8	149	57.0	3	2	1
1850	1741	39.5	156	61.5	3	1	4
Third World							
Average	916	51.8	112	45.1	5.0	5.4	
Best	2607	68.0	32	93.0	2	2	
Worst	224	38.0	184	10.0	7	7	

Sources:

Britain:

- Y (GDP/Head): based on Maddison (1995), Crafts and Harley (1992) and Feinstein (1981, p. 136).
E (life expectancy at birth): from Wrigley and Schofield (1981, p. 529).
M (infant mortality rate): from Woods (1993, p. 218).
L (adult literacy rate): from Schofield (1973, p. 442, 445).
R₁ (political rights index): Hawkins (1989), O'Gorman (1989).
R₂ (civil rights index): Aspinall (1949), Manchester (1980), Wickwar (1928), see text.
SS (effectiveness of poor relief system): Boyer (1990).

Third World: Data from Dasgupta and Weale (1992, p. 121) based on all countries where information is complete with an income of less than \$1500 in 1970 measured in 1980 international dollars.

Table 1 sets out the estimates to be used in the calculation of a Dasgupta and Weale index of the quality of life in industrializing Britain for six benchmark years. The table

also shows, for comparison, averages and the range of observations for the Dasgupta and Weale (1992) sample of poor countries. Two points stand out from Table 1. First, improvements in various aspects of the quality of life were only weakly correlated. Life expectancy, infant mortality and poor relief showed appreciable gains before 1820 but not thereafter while the opposite was the case for income per head, civil rights and literacy. Second, relative to the developing countries of 1980 Britain compares very badly in the demographic indicators but rather well in terms of political and civil rights.

Table 2. Borda Rule Rankings of Living Standards in Britain during the Industrial Revolution				
	DW Index		Augmented DW Index	
	Sum	Borda	Sum	Borda
1760	10	5	11	6
1780	10	5	12	5
1800	14	4	18	4
1820	18	3	23	3
1830	26	2	31	2
1850	29	1	32	1

Source: derived from Table 1. Borda rankings are from 1 = best to 6 = worst. In computing the sum of the rankings of components of the index the worst score is given the lowest rank - so the biggest total is the best result overall - and ties are treated as in Dasgupta and Weale (1992).

Table 2 shows that using the Borda Rule to aggregate the six indicators of the quality of life suggested by Dasgupta and Weale (the DW Index) shows a pattern of steady improvement after 1780 with 1850 emerging as the best year. When SS is incorporated to obtain the Augmented DW Index the pattern of improvement from

1760 to 1850 is strictly monotonic.¹ It is often supposed that looking at the overall quality of life would be more supportive of pessimist views on living standards than focusing only on real wages. This hypothesis is not, however, supported by the results in Table 2 even though the private income variable is only one of six or seven components of the indices of living standards.

1850 is, of course, not the best year on every indicator. The disappointing performance of infant mortality after 1830, presumably reflecting vulnerability to health risks early in life, at a time when real GDP/head was rising is consistent with evidence that adult heights were falling (Floud et al., 1990). An investigator who wished to weight the demographic and social security indicators very heavily relative to real wages or income and recalculated an adjusted Borda Rule on this basis might conclude that quality of life fell between 1830 and 1850. Evidence on individual preferences would clearly matter at this point; I return to this issue in the next section.

In their discussion of the implications of the heights data Floud et al. are at times very cautious on this issue (1990, pp. 286-7) while at other times seeming to suggest that heights/average nutritional status are perhaps the best available overall indicator of living standards (1990, p. 19, 305). The Dasgupta and Weale approach would straightaway suggest this latter point of view adopts too narrow a view of the quality of life and Table 1 sees improvements in literacy and civil rights which might counterbalance the deterioration in infant mortality.

¹If a 'best guess' index of average real wage rates were substituted for real GDP/person, these conclusions would not change, although the rankings of the private income variable for 1760-1800 would be altered with 1800 the worst year, 1780 the second lowest year and 1760 the third lowest year (Crafts, 1989; Crafts and Mills, 1994, Table 1).

Table 3. The 'Quality of Life' in Britain and its Peer Group, c. 1850/1860							
	Y	M	L	R₁	SS	Borda1	Borda2
USA	1503	207	85	2	5	32	37
Britain	2178	151	62	3	1	30	40
Denmark	1179	136	85	3	1	29	39
Sweden	1018	136	90	3	3	29	38
Belgium	1615	157	55	3	9	25	26
Norway	797	101	85	3	5	25	30
France	1209	179	60	4	8	22	26
Germany	1170	287	80	4	3	18	26
Austria	1147	244	60	4	5	13	18
Italy	897	231	25	3	9	12	13
Spain	842	180	25	5	9	9	10

Note: for R₁ and SS the data are rankings in which 1 is best but for computing the Borda sums 1 is worst and 11 is best.

Sources:

Y: (GDP/Head) based on Maddison (1995) estimates for 1870 expressed in terms of 1980 international dollars.

M: (infant mortality rate) from Chesnais (1992) and Haines (1994).

L: (adult literacy rate) from Cipolla (1969), except Britain based on Schofield (1973).

R₁: (political rights index) based on Anderson and Anderson (1967), Mackie and Rose (1982) and Silbey (1967).

SS: (poor relief system) based on Parliamentary Papers (1875), Leiby (1978).

Borda 1 and Borda 2 based on first four columns and all five columns respectively.

Table 3 attempts a comparison between Britain and other countries. Data limitations preclude the inclusion of life expectancy. I have also excluded the civil rights indicator because including two rights variables but only one demographic variable would seem to skew the Borda Rule comparisons relative to Dasgupta and Weale's intentions. The

comparisons in this table are necessarily tentative because the quality of the data is very poor. Nevertheless, it may be adequate to provide support for the following observations.

- (i) Britain once again emerges as relatively disappointing in terms of its mortality experience and is ranked only fourth best. In addition, achievements in literacy are unimpressive ranking only sixth best. Both these aspects of capabilities would have been potentially amenable to policy interventions, which might perhaps also have been justified on grounds of market failure from an efficiency point of view. On the other hand, despite the retrenchment after 1834, in comparative terms English poor relief still stands out as it had in the eighteenth century as "relatively generous and certain in its benefits" (Solar, 1995, p. 2)
- (ii) Correlations between the individual components of the quality of life and real GDP/person are much weaker than for the developing countries sample of the 1970s analyzed by Dasgupta and Weale. They found rank order correlations of 0.69 with infant mortality and 0.59 with literacy (1992, p.124) whereas in Table 3 these coefficients are -0.14 and 0.06 respectively. Overall the rank correlation between the Borda1 Index and GDP/person was 0.84 in the Dasgupta and Weale sample against 0.64 here. Using the Borda2 index the rank correlation falls to 0.49.
- (iii) Research on components of the quality of life other than private income seems to have, if anything, a higher priority for economic historians of nineteenth century Europe than for development economists.

IV. Exploring Some Counterfactuals

Comparative data suggest that British mortality was relatively high and literacy relatively low in the mid-nineteenth century. These outcomes might, of course, have been addressed by more effective policy interventions, in particular to the problems

arising from rapid urbanization. In considering this possibility, this section takes up the second of Hartwell and Engerman's key issues in the standard of living debate (1975, pp. 193-4).²

The response to this question may vary depending on whether evaluation of likely outcomes is based on the effects in enhancing capabilities or incomes so that it clearly can be seen as a (famous) example of the fundamental debate on development priorities raised by the human development school (Anand and Ravallion, 1993, pp. 134-5). In some cases interventions may be recommended on both grounds; for example, Solar has recently argued that the Old Poor Law not only provided a better system of social security than prevailed elsewhere in eighteenth century Europe but also tended to promote economic growth (1995, p. 16).

It might be thought that the Borda index can be used as a criterion for the evaluation of policy interventions. This is not always the case, however, and on occasions there may be enough quantitative evidence to overrule this approach. This can be illustrated in the context of the standard of living debate using the original Dasgupta and Weale measure of the quality of life.

If comparisons of the quality of life are to be made using the DW index, as in Table 2, a policy maker in 1851 might think an intervention would be justified if it led to a situation in which 1851 was at least as good as every previous year on all components of the Borda index. Clearly, this would require improvement in life expectancy and infant mortality and would also imply an improvement in the Borda

²Hartwell and Engerman (1975, pp. 193-4) distinguish three questions: 1) whether, given some set of exogenous changes, the working classes were better off than they would have been in the absence of industrialization; 2) whether, given the Industrial Revolution, it would have been possible for there to be some set of policies which would have permitted the working classes to have been better off than they actually were; 3) whether the working classes improved their standard of living over the period of the Industrial Revolution, say, from 1750 to 1850.

Rule score for 1851. Given the large discrepancy between rural and urban mortality stressed by Woods (1985), had there been lower migration from country to town the required improvement in demographic conditions could have been achieved. Greater protection rather than free trade might have brought this about (Williamson, 1990b, p. 136).

Consider the following calculation based on the differentials in life expectancy suggested by Woods (1985, p. 650) and on the computable general equilibrium estimates of factor market failure provided by Williamson (1990a, p. 207). Had the rural population remained at its 71 per cent 1821 share of total population in 1851 instead of falling to 56 per cent, then life expectancy would have been 1.43 years higher. In terms of Table 1, E would rise to 40.9 years and associated with this M would fall to 148 using Woods's (1993) formula. Williamson's model suggests that the fall of 34.1 per cent in non-rural employment which would be entailed would have cost around 10.4 per cent of GDP through a less efficient allocation of labour, thus reducing Y in Table 1 to 1560.³ This meets the criterion set.

Lower migration could have produced an improvement in the quality of life according to the Borda Rule. Yet such quantitative evidence as we have would call for more migration not less. Williamson's regression estimates indicate that real wages were higher in cities than in the countryside even after allowing for a substantial urban disamenities premium. His best guess estimates are of a real wage gap in the 1830s of 33.2 per cent after adjusting for cost of living differences and allowing for a

³By the same token eliminating the factor market failure detected by Williamson (1990, p. 207) would not improve the 1851 position in terms of the Borda index. His estimates suggest that had markets worked efficiently GDP would have been raised by 7 per cent by a reallocation of labour which would have reduced the rural labour force to 44 per cent of the total in 1851. This level was actually reached in 1871. If the intra-urban distribution is assumed in the counterfactual 1851 to have been that of 1871 then this implies that E falls to 38.5 and M rises to 162 - both below the actual 1820 level.

disamenities premium of 9.7 per cent (1990a, p. 193, 256). Apparently, taking into account the trade-offs willingly made in the labour market, an inferior environment was outweighed by higher wages.⁴ In this case, the Borda Rule, confined to ordinal comparisons, would be misleading and a poor basis for policy advice.

Recent research has re-interpreted the decline in mortality in the second half of the nineteenth century. Both Szreter (1988) and Hardy (1993) now attribute a high proportion of declining mortality from infectious diseases to public health initiatives, involving both capital expenditure on sanitation and education on hygiene. Szreter's discussion implies that this may have accounted for as much as 75 per cent of the decline in mortality. In this the enforcement of statutory duties on local authorities through legislation such as the 1875 Public Health Act and the provision of soft loans through the Local Government Board were key elements. The amounts spent on resources were, in fact, relatively modest - only reaching 2.5 per cent of GDP in 1900 (Peacock and Wiseman, 1967).

Putting these pieces of information together, it seems plausible to argue that, with appropriate public intervention, expenditure equivalent to less than 3 per cent of GDP per year during the second quarter of the nineteenth century could have raised life expectancy to about 44.5 years and reduced infant mortality to around 129 in 1850.⁵

⁴The same objection can be raised to suggestions that declining adult heights in urban areas indicate that living standards were falling (Floud et al., 1990 p. 305). People presumably did not seek to maximize height but improved their real standard of living by regarding a worse environment (and being shorter) plus higher wages as better.

⁵In 1901 urban population was about 2.5 times the 1851 level while real GDP was about 2.8 times the 1851 level. Only marginally higher expenditure on public health as a share of GDP seems likely to have been required. The estimated increase in life expectancy of 5 years is based on 75% of the total change estimated by Woods (1985) and the infant mortality estimate uses the formula in Woods (1993).

This would again satisfy the Borda Rule criterion set out above and would seem to be recommended on the basis of the human capabilities approach.

In this case, however, there is also an efficiency argument to be made along traditional cost benefit lines. Brown (1990) and Williamson (1990a) both point out a study of Preston in 1845 which calculates that returns from investment in sanitation would far exceed the costs. Brown (1990, p. 614) presents calculations which indicate that for mill owners in the town savings in disamenities premia paid to workers would have easily outweighed the rental costs of the capital involved. The problem seems to have been one of classic market failure - suboptimal expenditure on public goods in the context of free rider problems, unequal incidence of benefits and a narrow local tax base (Williamson, 1990a, p. 295).

The achievement of virtually universal literacy in the early twentieth century came after substantial public expenditure particularly from the 1870s on and, given the relatively low responsiveness of enrolment rates to subsidies, probably required free tuition and compulsory school attendance for, say, 25 weeks for 3 years (Mitch, 1984, p. 559; Mitch, 1986). In 1851, according to Mitch (1982), literacy was still optional for at least 39 per cent of occupations.

Mitch (1984, p.565) concludes that at best a program to establish universal literacy would have raised national income by about 7 per cent, allowing for both direct and opportunity costs. While in the 1840s there was an efficiency case for public educational expenditure based on likely social returns, it seems clear from Mitch's discussion that a goal of universal literacy could only be justified by a capabilities approach, particularly for females.

Overall, then it appears that the historical evidence is that quite modest public spending increases in mid-nineteenth century Britain could have enhanced the quality of life and at the same time have been justified in terms of rate of return. This is very

much consistent with the contemporary situation in developing countries according to Dasgupta (1993). Proponents of both income-centred and capabilities-based approaches to policy formulation could argue for greater public expenditure and that, in the presence of market failures, policy interventions were available to improve living standards.

V. Conclusions

In the introduction four questions were posed. The answers which have been suggested are as follows.

- (i) The paper uses the approach to the quality of life proposed by Dasgupta and Weale (1992) which takes a broad human development view and embraces literacy, life expectancy plus civil and political rights aggregated using the Borda Rule. On this basis the average quality of life was rising from 1780 to 1850. The important issue of the outcome for various subsets of the population is not addressed, however.
- (ii) Comparisons with the third world countries of the 1970s and mid-nineteenth century Europe both highlight disappointing mortality conditions in Britain at the end of the industrial revolution. This is clearly in considerable part due to unusually rapid British urbanization.
- (iii) In the mid nineteenth century the correlation between real GDP/person and components of the quality of life seems to be much weaker than recently. This suggests that the human development approach to evaluating economic performance may be an important complement to historical national accounting.
- (iv) The quality of life approach indicates that there was an important potential role for public spending in mid-nineteenth century Britain to enhance capabilities by improving public health and education. In each aspect there is also an efficiency

case for intervention based on rates of return as well as the argument based on well-being.

The Dasgupta and Weale approach to measuring living standards deserves some attention from economic historians. The use of the Borda Rule offers a possible solution to index number problems which have, at least implicitly, always worried participants in the standard of living debate. At the same time, as the discussion of internal migration and its implications for the quality of life index revealed, this entirely ordinal approach can give misleading indications. Evidence relevant to weighting the components of the quality of life remains a key aspect of evaluating policy options as well as economic performance.

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Appendix

The countries in the Dasgupta and Weale (1992) sample are the following: Bangladesh, Benin, Bolivia, Botswana, Burundi, Central African Republic, Chad, China, Ecuador, Egypt, Ethiopia, Gambia, Haiti, Honduras, India, Indonesia, Jordan, Kenya, Korea, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Nepal, Niger, Nigeria, Pakistan, Paraguay, Philippines, Rwanda, Senegal, Sierra Leone, Somalia, Sri Lanka, Sudan, Swaziland, Tanzania, Thailand, Tunisia, Uganda, Yemen, Zaire, Zambia, Zimbabwe.

Taylor and Jodice (1983, pp. 60-1) give the following definitions for their index of political rights:

- 1: Political systems in which the great majority of persons have both the right and the opportunity to participate in the electoral process. Political parties may be freely formed for the purpose of making the right to compete for public office fairly general.
- 2: Political systems with an open process which does not always work well, however, due to extreme poverty, a feudal social structure, violence or other limitations on potential participants or results. As is the case with countries coded 1 a leader or party can be voted out of office.
- 3: Political systems in which people may elect their leaders or representatives but in which coups d'etat, large-scale interference with election results, an often non-democratic procedures occur.
- 4: Systems in which full democratic elections are blocked constitutionally or have little significance in determining power distributions.
- 5: Systems in which elections are closely controlled or limited or in which the results have little significance.
- 6: Political systems without elections or with elections involving only a single list of candidates in which voting is largely a matter of demonstrating support for the system.
- 7: Systems that are tyrannies without legitimacy.

Taylor and Jodice (1983, pp. 64-5) give the following definitions for their index of civil rights.

- 1: Political systems in which the rule of law is unshaken. Freedom of expression is both possible and evident in a variety of news media.

2: Political systems that aspire to the above level of civil rights but are unable to achieve it because of violence, ignorance, or unavailability of the media, or because they have restrictive laws that seem to be greater than are needed for maintaining order.

3: Political systems that have the trappings of civil liberty and whose governments may be successfully opposed in the courts ,although they may be threatened or have unresolvable political deadlocks and may often have to rely upon martial law, jailing for sedition, and suppression of publications.

4: Political systems in which there are broad areas of freedom but also broad areas of illegality. States recently emerging from a revolutionary situation or in transition from traditional society may easily fall into this category.

5: Political systems in which civil rights are often denied but in which there is no doctrine on which the denial is based. The media are often weak, controlled by the government and censored.

6: Countries in which no civil rights are thought to take priority over the rights of the state, although criticism is allowed to expressed in limited ways.

7: Political systems of which the outside world never hears a criticism except when it is condemned by the state. Citizens have no rights in relation to the state.

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