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Author(s): Anthony B. Atkinson

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The Contributions of Amartya Sen to Welfare Economics

Anthony B. Atkinson*

Nuffield College, Oxford OX1 1NF, England

I. Introduction

Amartya Sen occupies a unique position among modern economists. He is an outstanding economic theorist, a world authority on social choice and welfare economics; he is a leading figure in development economics, carrying out path-breaking work on appraising the effectiveness of investment in poor countries and, more recently, on the economic analysis of famines. He has greatly influenced international organisations such as the United Nations agencies, the ILO, and the World Bank. At the same time, he takes a broad view of the subject and has done much to enlarge the perspective of economists. He is as much at home writing for the *Journal of Philosophy* as for the *Economic Journal*; at Harvard, he was both Professor of Economics and Professor of Philosophy.

The unusually wide range of Sen's research means that it is impossible to do justice to his contributions in the space available. The Nobel citation refers specifically to "Social Choice, Welfare Distributions, and Poverty", but this is still a vast domain. Even leaving aside Social Choice and other areas covered by Kenneth Arrow in his article, I have had to be highly selective. Section II deals with welfare economics and Sen's critique of welfarism; Section III with the measurement of economic inequality and poverty; Section IV with Sen's contributions to development economics and the implementation of his concept of capabilities. This division into sections is inevitably somewhat artificial, and in the final Section V, I seek to bring together the different fields of research, and some others not covered in detail, in an attempt to identify the key qualities of Sen's contribution.

In choosing these areas of Sen's work, I am leaving out, in addition to social choice and rationality, much of his writing on social, political and legal philosophy; and I scarcely refer to his articles and books on the Indian economy and society. But, then, Sen is prolific to a degree which is remarkable even for winners of the Nobel Memorial Prize. The Biblio-

*In this appreciation, I have drawn on Atkinson (1987) and on Sen's conversation with Arjo Klamer (1989). I am most grateful to Christopher Bliss, François Bourguignon, David Hendry, and John Muellbauer for having read the first draft.

graphy¹ lists 23 books and more than 250 journal articles. For this reason, I have listed, at the start of each section, three “key” readings which are my personal recommendation to the time-constrained reader wanting “the essential Sen”. But just to read this “Top Twelve” would be to miss a great deal.

Among the many jewels omitted are Sen’s essay “On Some Debates in Capital Theory”, in which the Venerable Subhuti is reborn as an economist specialising in capital theory, which he debates with Buddha. Subhuti laments that, as a result of learning about multiple switching,² he will never again be able to recommend choosing low capital-intensity techniques in a low-wage economy. Buddha reassures him

“We may not be absolutely certain of the correct relative price of baskets *vis-à-vis* bulldozers, but within the limits of variations that may be relevant the former may involve a lower capital intensity than the latter in each case. . . . just because one cannot rank overall capital intensities in some cases, one should not rule out the rankings that one can do” [IX, 1974, pp. 333–334].

I quote this passage because to my mind it captures very well the approach that Sen himself adopts throughout his economics. He is quick to identify analytical error, but always seeks to make constructive progress – to see what economists “can do”.

II. Welfare Economics and Welfarism³

Amartya Sen was awarded the Nobel Memorial Prize “for his contributions to welfare economics”. Sen, and the Nobel Committee, interpret “welfare economics” broadly, but I begin with the narrower definition current forty years ago. The fact that we now view the subject differently is, to no little extent, a tribute to the influence of his writing. That we need to go beyond welfarism may now seem obvious, but it has not always been so.

In the 1950s, the utilitarian approach was still represented in economics, as demonstrated by its powerful use by James Meade in his *Trade and Welfare* (1955), but Lionel Robbins’ *An Essay on the Nature and Signifi-*

¹The Bibliography follows this article. Dates in brackets refer to publications by Sen listed in the Bibliography. Those preceded by a Roman numeral refer to the subject headings of articles written by Sen; those without a Roman numeral refer to his books. Dates in parentheses relate to references listed at the end of this article.

²I.e. that technique A may be more profitable than technique B at a high interest rate, less profitable at a lower interest rate, and become more profitable again at a still lower interest rate.

³Key reading: (a) *Collective Choice and Welfare* [1970], unstarred chapters; (b) “Personal Utilities and Public Judgements: or What’s Wrong with Welfare Economics?” [II, 1979], reprinted in *Choice, Welfare and Measurement* [1982]; (c) “Well-being, Agency and Freedom: The Dewey Lectures 1984” [XVI, 1985].

cance of Economic Science (1932), and the subsequent New Welfare Economics, had led to a state where, as Sen himself described it,

“nihilism has been the dominant note in a number of studies on welfare economics bearing, as Baumol (1965) puts it, ‘an ill-concealed resemblance to obituary notices’” [1970, p. 58].

“Nihilism” is, as already noted, alien to Sen’s nature, and his approach to welfare economics has been to seek positive steps forward from traditional utilitarianism. This was the hallmark of his *Collective Choice and Welfare* [1970], which has dominated the field, and of his subsequent books, including *On Economic Inequality* [1973] and *Inequality Reexamined* [1992]. His aim has been to provide both a critique and an alternative.

Utilitarianism and Pareto Efficiency

For Sen, the utilitarian approach can be factored into three elements (see for example [XVI, 1985, p. 175]):

- (a) *act consequentialism*, so that a decision is evaluated according to the resulting state,
- (b) *welfarism*, in that decisions are evaluated according to a social welfare function defined over the levels of individual utility,
- (c) *sum-ranking*, in that the criterion is the sum of individual utilities.

Although few economists today openly admit to being utilitarian, implicit assumptions of this kind underlie many policy prescriptions. Even if macro-economists avoid (c) by positing identical representative agents with dynastic utility functions, their policy prescriptions, such as “Golden Rules”, are implicitly welfarist and consequentialist. The analysis in which Sen engages is therefore of considerable relevance:

“While these foundational issues are typically met with absolute silence in welfare economics, they are in fact, rather important for policy judgements and economic evaluation” [1982, p. 28].

In what follows, I seek to outline Sen’s critique of utilitarianism, and welfarism, and his proposed alternative, from the standpoint of the practising economist who wishes to understand the welfare economic basis for policy statements. I should however emphasise that my utilitarian – in a different sense – treatment of Sen’s work does not do justice to its diversity and highly textured nature. Just to give one instance, the utilities in (b) could be interpreted as pleasure, or as fulfilled desires, or as the representation of choice; see Sugden (1993, p. 1948). Equally, I do not consider the breadth of definition of “consequences” and do not address the critique of consequentialism.

I begin with Sen's objection to the third element – sum-ranking – which is that

“maximising the sum of individual utilities is supremely unconcerned with the personal distribution of that sum. This should make it a particularly unsuitable approach to use for measuring or judging inequality” [1973, p. 16].

He goes on to note that

“Interestingly enough, however, not only has utilitarianism been fairly widely used for distributional judgements, it has – somewhat amazingly – even developed the reputation of being an egalitarian criterion” [1973, p. 16].

This came about because of the over-simplified “cake-sharing” model which underlay much discussion: in this case, equating marginal utilities involved equating total utilities as well. In general this does not happen,⁴ as illustrated by the example Sen uses to motivate his Weak Equity Axiom [1973, p. 18]; see also [XVI, 1974b]. In this example, person B, who is disabled, derives half as much utility from any level of income as person A, who is in full health. Sen's Axiom requires that, in such circumstances, with a given total income, more (or, in a weaker version, no less) should be given to B, whereas a utilitarian solution would give more to A.

If, on the other hand, we reject sum-ranking, and do not replace it by any other form of interpersonal comparisons, then reliance on only (a) and (b) means a retreat to the criterion of Pareto efficiency, requiring that there be no interpersonal conflict in any policy recommendation. There may, however, be intermediate positions, and the exploration of this possibility is one of Sen's important contributions; see [1970] and [I, 1970b]. As he has brought out, the relevant form of the comparisons depends on the specification of the maximand. With sum-ranking, it is utility *differences* that need to be comparable (i.e., we could add an individual specific constant to any utility function); alternatively, with a Rawlsian maxi-min objective (misrepresenting Rawls (1971) as concerned with utilities), it is utility *levels* that are required to be comparable (i.e., we could apply any monotonic transformation to all utilities).

Comparability may be partial, rather than full. To take Sen's example,⁵

“Suppose we are debating the consequences on the aggregate welfare of

⁴The non-egalitarian nature of utilitarianism emerges clearly when the possibility frontier is non-symmetric, as exemplified by the models of optimal income taxation introduced by Mirrlees (1971).

⁵My colleague David Hendry has pointed out to me that this account of Nero should be regarded as, at best, a “stylised” fact. Certainly Nero appears to have been more of a vocalist than a fiddler.

Romans of the act of Rome being burnt while Nero played his fiddle. We recognize that Nero was delighted while the other Romans suffered, but suppose that we still say that the sum total of welfare went down as a consequence" [1970, p. 99].

Without comparability, we cannot make such a statement, but we do not necessarily need full difference comparability in order to arrive at a ranking. Suppose that we are willing to place a limit on the extent of possible variation across people in the scaling of differences: for example, raising or lowering the weight on one person's utility relative to another person's by at most some specified factor. Then we may still be able to claim that the sum of Roman utilities fell, since even the largest possible weight to Nero leaves him outnumbered.

Inherent in such an approach is of course the risk that it will leave questions unresolved. Sen has argued that this is not grounds for despair. In his Dewey Lectures [XVI, 1985, p. 178], he examined the alleged need for completeness, and argued that

"Yielding complete orders cannot be an a priori requirement of the legitimacy of a moral principle" [XVI, 1985, p. 180].

This is a position with which economists are perhaps more comfortable than philosophers. A partial ordering is all that follows from the principle of Pareto efficiency, and Sen is careful to state that this is not the grounds on which he takes issue with this principle:

"The Pareto principle (i) lists a set of virtues, and (ii) uses dominance of virtues as the criterion. What is in dispute here is the former, not the latter" [II, 1979, p. 554].

What is open to question is the focus on the space of individual utilities.

Beyond Welfarism

Why does Sen take issue with focusing on the space of individual utilities? His essential argument is that its informational base is insufficiently rich: the same distribution of individual welfares may coexist with very different scores on other dimensions that are important to social evaluation. A theory of welfare must be based on more than individual utilities, whether they are interpreted as pleasure, as fulfilment, or as revealed preference. Sen has emphasized the need to take a broader view. As he noted in his paper "Welfare Economics and the Real World",

"One of the extraordinary features of standard welfare economics has been the neglect of information about health, morbidity and longevity. Though these variables have often been taken seriously in the development

literature . . . , they have typically been ignored in welfare-economic treatises" [II, 1986b, p. 11].

His critique of utilitarianism is quite distinct from that of ordinalists, which was concerned with paucity of utility information:

"I would now like to dispute the acceptability of welfarism *even when* utility information is as complete as it can possibly be" [II, 1979, p. 547].

In rejecting welfarism, Sen was not alone. The difference principle of Rawls (1971) is concerned with the position of the least advantaged defined not by personal welfare, but by "primary goods," or "things that every rational man is presumed to want". This takes us outside the traditional scope of welfare economics. The rejection of the welfarist approach is similarly to be found in Marxist theories of exploitation, relating social judgements to the historical information that capital represents the product of past labour. Nozick's (1974) entitlement theory of justice is quite different but equally appeals to historical information. For him, it is not the distribution of income that matters but the *process* by which it is brought about, people being "entitled" to resources that were justly acquired or that were transferred to them according to a just process, even if this means they will be immensely rich, and that their riches may be of no benefit to the poor.

It is in his alternative to welfarism that Sen is distinctive. This is based on "capabilities", an approach which has attracted a great deal of interest.⁶ In his 1979 Tanner Lecture [XVI, 1980], his Hennisman Lecture in 1982, *Commodities and Capabilities* [1985], and subsequent writings, he has made a forceful case that assessment of the standard of living should focus on

"neither commodities, nor characteristics (in the sense of Gorman and Lancaster), nor utility, but something that may be called a person's capability." [III, 1983, p. 160].

Capability refers to the freedom that a person has in terms of choice of functionings, where the latter refer to what a person can achieve (such as being able to take part in the life of the community). Sen illustrates this by the example of a bicycle:

"It is, of course, a commodity. It has several characteristics, and let us concentrate on one particular characteristic, viz., transportation. Having a bike gives a person the ability to move about in a certain way that he may not be able to do without the bike. So the transportation *characteristic* of the bike gives the person the *capability* of moving in a certain way." [III, 1983, p. 160].

⁶See, among others, the Symposia in *Recherches Economiques de Louvain*, vol. 56 (1990), *Giornale degli Economisti e Annali di Economia*, vol. 53 (1994), and *Notizie di Politeia*, vol. 12 (1996).

He recognises that the capability may generate utility, but argues that it is the capability to function that comes closest to the notion of standard of living.

The capability approach may be interpreted in two different ways. It may be concerned with the actual *chosen* functioning, or with the *options* that a person has, the capability set; see Sen and Foster [1997, Diagram A7.1]. The example given is of two people who are starving, one of whom lacks food, the other of whom is starving out of choice on account of religious beliefs. Evaluation in terms of actual functioning (i.e., starvation in both cases) is closer to traditional welfare economics, being concerned with outcomes, but this does not capture the difference between the two people, which is that the second person could have made a different choice. This is accommodated by the second, options approach, which is

“a natural direction to go if the *process* through which outcomes are generated is of a significance of its own” (Sen and Foster [1997, p. 202]).

The options approach raises in turn the issue as to how we evaluate the set of options: the degree of freedom of choice. This is addressed by Sen in *Commodities and Capabilities* [1985], where he begins by noting that valuing the set according to the value of the best element defeats the object of attaching some weight to the range of choice. He goes on to explore a dominance argument that may allow comparisons to be made, although the criterion suggested is very demanding. Progress may require agreement about the extent to which information on preferences is admissible; see Sugden (1993, p. 1953). Arrow (1995), for example, has argued that an appropriate definition of freedom of choice requires some reference to preferences, and gives examples in which there is a probability distribution over preferences.

For Sen, welfare economics certainly has a positive future:

“Though there is much information readily available in theoretical welfare economics, there is far more to be considered and much that is more difficult to obtain. It is the welfare economists who, by recognising this informational lack and by making greater demands, can fill the informational gap” (Highlight of [II, 1986b, p. 75]).

In the next two sections, I describe some of the ways in which Sen has made this concrete. In Section III, I consider the measurement of inequality and poverty; in Section IV, I examine his contribution to development economics, and take up the issue of the implementation of the capabilities approach.

III. Measuring Inequality and Poverty⁷

Measuring inequality is an old topic. Pigou (1912) and Dalton (1920) had expressed in a utilitarian framework the idea that income inequality could be measured as the distance between the actual distribution and the equal distribution. In the 1960s this approach was developed in a more general framework by Kolm (1969) and Atkinson (1970). Sen's Radcliffe Lectures *On Economic Inequality* [1973], re-issued in [1997] with a substantial annexe written jointly with James Foster, gave powerful impetus to this new literature.

Measuring Inequality and Real National Income

The key concept (even though it does not appear in the Index to Sen [1973]) is that of *dominance*, borrowed from stochastic dominance theory. A distribution of income is said to dominate another if and only if social welfare is greater for the former for all possible social welfare functions in some given class. As shown by Kolm (1969), Dasgupta, Sen and Starrett [III, 1973b], and Rothschild and Stiglitz (1973), the class of social welfare functions which it is natural to consider is that of non-decreasing, s-concave functions (referred to here as the class W_2).⁸ They show that, for constant total income and population, dominance of distribution A over distribution B for the class W_2 is equivalent to dominance of the Lorenz curve for A over that for B . Moreover, this is equivalent to it being possible to reach distribution A from distribution B by making a series of mean preserving equalising transfers. This mathematical result links the welfare economic approach to two practical, intuitive measures, the Lorenz curve in particular being familiar to economists from first year textbooks. A firm underpinning is thus provided for a standard practice. Moreover, this formalism opened the way to further advances, such as the use of generalised Lorenz curves, and criteria which can be applied where Lorenz curves cross; see Sen and Foster [1997].

The dominance approach leads to "Inequality as a Quasi-Ordering", to quote the title of Chapter 3 in Sen [1973]. It is possible

"to arrive at a partial order on the basis of the rule of going by the *congruence* of different complete orderings; for example, the shared rank-

⁷Key readings: (a) *On Economic Inequality* [1973 and 1997]; (b) "Real National Income" [III, 1976a], reprinted in *Choice, Welfare and Measurement* [1982]; (c) "Poverty: An Ordinal Approach to Measurement" [III, 1976b], reprinted in *Choice, Welfare and Measurement* [1982].

⁸s-concavity is weaker than quasi-concavity, as may readily be seen in the two-person case: quasi-concavity requires that the social indifference curves be convex to the origin, whereas s-concavity requires only that a move towards the 45° line raise social welfare.

ings of complete orders generated by different statistical measures of income inequality” [1997, p. 132].

(In the case of the result quoted in the previous paragraph, the rankings are those shared by social welfare functions in the class W_2 .) For reasons already discussed, a partial order may be very valuable in its own right. It serves to locate the areas of disagreement. In order to arrive at a complete ordering, further structure has to be imposed on our social values. Sen [II, 1974] provided an axiomatisation for a complete ordering, based on the principle that the weights on incomes are based on the *ranking* of welfare levels, which led to the result that different distributions of a given total income would be ordered in the same way as the negative of the Gini coefficient. In supplying this justification for a widely-used summary measure of inequality, he argues that this approach

“makes much use of level comparability without bringing in interpersonally comparable cardinal welfare functions, but at the same time shuns Rawlsian extremism” (i.e., concentrating on the welfare level of the worst-off only) [II, 1974, p. 398].

As developed in Sen [III, 1976a], this leads to a measure of real income for a country which is the mean income multiplied by $(1 - G)$, where G is the Gini coefficient. (This real income measure is twice the area under the generalised Lorenz curve.) Thus the US with a Gini of 0.35, would, on this basis, have a real income only 13% higher than that of Germany, where the mean income is 23% lower but the Gini coefficient is only 0.25.⁹

Sen’s article on real national income [III, 1976a] (see also [III, 1979b]) addresses the multi-dimensional nature of commodity bundles, and proposes that real income comparisons should be restructured in terms of “named goods vectors”, treating the same commodity going to a different person as a different good. This article is in my Top Twelve list because it demonstrates not only his contribution to welfare economic theory but also a deep concern for implementation. Focus on translation into practice leads him to raise issues which do not occur to theorists and are treated as unproblematic by practitioners. Consider the comparison of Germany and the US, and suppose that each country has the same population of n people (Sen also discusses the handling of different-sized populations). Are we comparing the existing US distribution of named goods with *any* possible allocation to the n Americans of the n German baskets of goods? Or is the comparison with a specified allocation (for example, giving the i th richest the same bundle),

⁹The Gini coefficients are taken from Gottschalk and Smeeding (1997, p. 661), where the full definitions are given; the mean income is taken as GDP per head at purchasing power parities in 1995 from OECD (1997, p. 18).

and, if so, why? Or do we require that a ranking hold for *all* possible allocations?

Poverty

The bottom of the income distribution has been singled out for particular attention in studies of *poverty*. This is a controversial subject in many respects, including the definition of the poverty line itself, discussed below. Even however if we are agreed on the appropriate cut-off (and on other matters such as the appropriate equivalence scales), there remains the question as to the choice of poverty indicator. The almost universal practice is to count the proportion of the population below the poverty line: the “head count”, *H*. A good example is the widely quoted statistic, in the 1980s, of 50 million poor in the European Community.

Use of this summary measure was called into question in the article of Sen [III, 1976b], which generated a large literature. Sen found the degree of support commanded by the headcount to be “quite astonishing” [III, 1976a, p. 295], since it gives no indication of the severity of poverty: people may be close to the poverty line or far below. The properties of the head count may be seen from considering the marginal valuation of income implied by use of the headcount. Clearly a marginal 1 euro contributes zero if it goes to a person above the poverty line. But it is also zero if it goes to people more than 1 euro below the line, since it still leaves them below and the poverty count is unchanged. The implied marginal valuation of income is very ill-behaved.

Suppose that we assume that the marginal valuation of income declines with income, thus excluding the headcount. (I am also assuming that the marginal valuation of income may be meaningfully defined.) What then are the candidates? One is the poverty deficit, which is the sum of the shortfall from the poverty line, which may be expressed as the mean percentage shortfall, *I*. The marginal value of a euro is then the same for all incomes below the poverty line, which led Sen to criticise the poverty deficit in turn for evaluating equally all transfers to people below the poverty line irrespective of the seriousness of their poverty: like the headcount, it is

“blind to distribution among the poor” [1981, p. 186].

The alternative proposed by Sen is derived from an axiomatic structure where the key axiom is that which weights each person’s poverty gap by the person’s rank in the ordering of the poor, parallel to the inequality axiom described above. In answer to the question – why should the severity of a 1,000 euro shortfall from the poverty line depend solely on how many people are ahead of you? – Sen cites “relative deprivation”: “the lower a person is in the welfare scale, the greater his sense of poverty.” This axiomatisation

means that a transfer from a person close to the poverty line to a person far below the line has the effect of reducing measured poverty, in a way that depends on the ranks of the people affected. The resulting "Sen index" takes the form:

$$P = H\{I + (1 - I)G\}$$

where G is the Gini coefficient of the income distribution of the poor.

Sen's article was the catalyst for the theoretical analysis of poverty measures, and his index has been widely used in academic studies. It has however had less impact on official statistical practice. In the voluminous United States poverty statistics, calculations are made of the income deficit, in for example Dalaker and Naifeh (1998, Table D), but the great majority of the results refer to the head count.¹⁰ In the United Kingdom, there has been a great improvement in the statistics produced by the Department of Social Security, *Households Below Average Income*, but these do not use alternative poverty indices. While there may be agreement on the need to use a measure sensitive to the depth of poverty, it has proved harder to convince policy-makers of the salience of the particular approach adopted by Sen, with its emphasis on a person's rank in the distribution.

IV. Development and Capabilities¹¹

In his conversation with Klamer (1989, p. 148), Sen is reported as saying that "I got more fun out of social choice theory" than out of work on famines or the measurement of inequality, but his allocation of research time has evidently been guided by more than hedonism. Right from the start of his career, he has been motivated by the challenge of applying cool, yet concerned, analysis to economic development. The importance of using economics to tackle fundamental human problems is recognised in the Prize Citation. It cannot be an accident that, in a space of three years, the Nobel Committee has honoured authors of the two manuals which dominated the literature and practice of investment appraisal in developing countries (see below).

¹⁰The National Research Council review of U.S. poverty measures, cf. Citro and Michael (1995, p. 309), did recommend that the official poverty series should provide statistics on the distribution of income for the poor, but we could have been more bold.

¹¹Key readings: (a) Introduction to Third Edition of *Choice of Techniques* [1960a, 1968], reprinted in *Resources, Values and Development* [1984]; (b) *Commodities and Capabilities* [1985]; (c) "Mortality as an Indicator of Economic Success and Failure" [X, 1998].

Choice of Techniques

Sen's Cambridge Ph.D. thesis, *Choice of Techniques* [1960a], brought clarity to a confused debate on whether developing countries should use more labour-intensive methods of production than would be profitable at the market wage rate. In other words, should they use a "shadow" wage rate less than the market wage? Where labour is abundant and capital scarce, it is tempting to argue for the adoption of highly labour-intensive methods, but this ignores the implications for the future availability of capital, in that the savings rate may be lower if more is paid out in total wages. Sen takes the example of cotton weaving, where hand looms may have the highest output per unit of capital, but factory power looms may generate a larger surplus that can be invested to provide more capital in the future. This point, which presumes that savings are insufficient and that no alternative policies to encourage savings are available, had been made by Maurice Dobb, to whom Sen owed his interest in the subject.

Sen's contribution was to provide an analytical framework within which these issues could be discussed, a framework that combines elegance of theory with a concern for practical application. The solution is given by the shadow price for labour obtained from formulating the problem as an exercise in constrained optimisation. The shadow cost takes account of the full economic implications of employing an additional person. Such implications include the reduction in surplus for investment as well as the loss of the output that the worker would have produced elsewhere (which could be zero). The notion of shadow prices had been well understood since the debates in the 1930s and 1940s on the economics of planning, but Sen refined it as a practical tool of investment appraisal, to be used to determine the choice of projects undertaken, showing how earlier formulations could be derived as special cases.

Together with two other major contributors to the literature on project appraisal, Partha Dasgupta and Stephen Marglin, Sen later wrote the UNIDO *Guidelines for Project Evaluation* [1972]. This manual, together with that of Little and Mirrlees (1969), has been widely influential in showing how divergences between social and market values, of the type just described, could be taken into account in investment decisions. The differences in their recommendations were elucidated by both sets of authors in a 1972 Symposium, cf. Dasgupta (1972) and Little and Mirrlees (1972), and in Sen [XI, 1972].¹² Sen clarifies the matter by introducing the concept of "control areas". The decision-maker is part of a political machinery and is constrained by a complex structure within which he has to operate. The consequences of investing in, say, a chemical plant depend on what else can

¹²For an extensive survey, see Drèze and Stern (1987).

be changed. It might be preferable for the chemicals to be imported, but this may be precluded by a political decision in favour of economic independence from foreign suppliers. Successful policy-making requires an understanding of the constraints that in fact hold and clarity about the precise area in which the person in question can exercise effective control. Armed with this insight, one can see how differences in the two approaches can be interpreted in terms of differences in assumptions about political constraints; see Sen [1984, p. 21]. This elucidation is not only intrinsically of interest, but also it is an illustration of a pioneering contribution by Sen to what is today called “political economy”.

Implementing the Capability Approach

In his Presidential Address to the Development Studies Association, “Development: Which Way Now?”, Sen reacted to the criticisms being made at that time of development economics, arguing that

“in the field of causation of growth, there is much life left in traditional analyses” [X, 1983b, p. 760].

But he was quite clear that the social dimension of development had been woefully neglected. It was around this time that he began to develop the concept of capabilities. As we have seen in Section I, Sen has argued that, in the chain

Commodities → Characteristics → Capability → Utility

it is

“the third category – that of capability to function – that comes closest to the notion of standard of living” [III, 1983, p. 160].

At the same time, setting the issue in the context of economic and social development raises the key question of the implementation of the capability approach. In his review of *Inequality Reexamined* [1992], Robert Sugden noted that

“Given the rich array of functionings that Sen takes to be relevant, given the extent of disagreement among reasonable people about the nature of the good life, and given the unresolved problem of how to value sets, it is natural to ask how far Sen’s framework is operational” (1993, p. 1953).

In seeking to answer this question, it is important to bear in mind that there is more than one way in which an idea of this kind can be operationally effective. In particular, the application of an idea may be powerful *in theoretical terms*, without necessarily leading to a quantitative measure. A

concept is effective if it causes people to think in a different way, and this applies to analytical models as well as to quantification.

The illuminatory power of the capability approach is well illustrated by its application to the definition of poverty in the context of economic development. It has helped sort out

“the absolute-relative disputation in the conceptualization of poverty. At the risk of over-simplification, I would like to say that poverty is an absolute notion in the space of capabilities but very often it will take a relative form in the space of commodities or characteristics” [III, 1983, p. 161].

Relative deprivation in the space of incomes can lead to absolute deprivation in the space of capabilities:

“In a country that is generally rich, more income may be needed to buy enough commodities to achieve the *same social functioning*, such as “appearing in public without shame”. The same applies to the capability of “taking part in the life of the community” [1992, p. 115].

In this way, Sen exposes the popular confusion that an absolute approach implies a constant real income standard when measuring poverty. Rising living standards in the community as a whole may lead to a poverty line that increases in real terms, even when our concern is limited to absolute deprivation in the space of capabilities.

The empirical implementation of the capability approach has attracted much interest. The Human Development Index, published by the United Nations Development Program, based on life expectancy at birth, literacy, and real income per head, has been greatly influenced by Sen’s concept; see Anand and Ravallion (1993). The first of these dimensions has been the subject of considerable work by Sen himself,¹³ where he has in particular stressed the significance of mortality when considering the position of groups suffering discrimination on grounds of caste, race or gender.¹⁴ In his UNICEF Innocenti Lecture, for example, he argued that

“mortality information can be used to throw light on some of the coarsest aspects of gender-related inequality” [X, 1998, p. 10].

This leads him to make estimates of the number of “missing women”, comparing the female/male ratio with that expected in the absence of gender bias in mortality. Techniques of estimation vary, but Drèze and Sen [1989] arrive at a figure of around 100 million.

¹³I am not attempting in this article to cover the vigorous debate surrounding his analysis of famine; for excellent recent surveys, see Osmani (1995) and Ravallion (1997).

¹⁴As has the second – literacy; see, for example, Drèze and Sen [1995].

V. The Compleat Economist¹⁵

What then are the main features of Sen's extraordinarily impressive contribution? I have already highlighted the constructiveness of his approach: he is not content simply to point out difficulties. He himself has emphasized

“the danger of falling prey to a kind of nihilism (which) takes the form of noting, quite legitimately, a difficulty of some sort, and then constructing from it a picture of total disaster.” [1973, p. 78].

What Sen has sought to do is to open new fields for research. To take one example not covered earlier, he has attacked the revealed preference approach to consumer behaviour for its overly narrow view [V, 1973 and V, 1977], but has not stopped there. In an early article, on “Labour Allocation in a Co-operative Enterprise” [II, 1966], for instance, he explored the implications of assuming that people having a degree of sympathy with others. For Sen, this is one way of reacting to the objection that

“*purely* economic man is indeed close to being a social moron. Economic theory has been much preoccupied with this rational fool” [V, 1977].

These two articles, on co-operative enterprises and on “rational fools”, have not been covered in my appreciation, but could not be excluded from my Top Twelve.

The second striking feature is the integrated view of the subject that runs through his work in different fields and links the research at different stages of his career. This is apparent from the way in which the essays on development economics interlock with those on social justice. Concern with famine is linked to that with poverty, and writing on the measurement of poverty draws in turn on his more philosophical investigations. There is a close connection between his work on individual choice behaviour and that on social choice theory; see his comments at the end of Klamer (1989). He has drawn attention to the role of social values in affecting individual behaviour, and argued that recognition of the complexity of individual motivations has implications for the formation of social judgements.

An instance of the links in his work, both across subjects and across time, is provided by his recent writing on the employment problem in Europe [XIII, 1997]. He has long been concerned with employment. Unemployment and disguised unemployment were central to *Choice of Techniques* [1960a], and in such articles as “Peasants and Dualism with or without surplus Labour” [X, 1966]. Much of this is highly relevant to debates about

¹⁵Key readings: (a) “Labour Allocation in a Co-operative Enterprise” [II, 1966], reprinted in *Resources, Values and Development* [1984]; (b) “Rational Fools: A Critique of the Behavioural Foundations of Economic Theory” [V, 1977], reprinted in *Choice, Welfare and Measurement* [1982]; (c) “Inequality, Unemployment and Contemporary Europe” [XIII, 1997].

unemployment more generally. In his *Employment, Technology and Development* [1975], he uses the situation of Macheath in Brecht's *The Threepenny Opera*¹⁶ to illustrate the complexity of employment as a concept, distinguishing between the income aspect, the production aspect and the recognition aspect. Unpicking the role of employment in this way is important in thinking about contemporary unemployment in Europe, and Sen has recently challenged Europeans for being too complacent. He contrasts attitudes in the United States and Europe:

“American social ethics finds it possible to be very non-supportive of the indigent and the impoverished, in a way that the typical West European, reared in a welfare state, finds hard to accept. But the same American social ethics would find the double-digit levels of unemployment, common in Europe, to be quite intolerable” [XIII, 1997, p. 9].

In rising to this challenge, it is natural to ask how Sen's highly textured analysis of labour markets in developing countries can be applied to understanding the rise of unemployment in Europe. In my view, we certainly need to pay more attention to the role of social norms and group behaviour, and how far increased European unemployment represents a shift in social norms. These have been stressed when analysing the behaviour of workers by Akerlof (1981), Solow (1990) and Lindbeck (1995), but we need also to look at the behaviour of employers and the persistence, or the breakdown, of the norm of being a “good employer”.

The third distinguishing characteristic of Sen's contribution is his broad perspective of the role of economics. In the introduction to *Resources, Values and Development*, he criticizes the narrow boundaries of modern economics,

“involving partitions that classical economists, such as Smith or Marx, would not easily have recognized.” [1984, p. 1].

He has done much to reverse this narrowing of scope. By emphasizing the richness of human motives, the institutional complexities of development, the subtleties of social goals, he has stimulated research on topics that take one well beyond narrow textbook boundaries. Notably, Sen's breadth of interests has, since the early days of his career, taken him into the field of philosophy. In linking the problem of social choice to the writings of moral philosophers and the longstanding concerns of ethical theory, Sen's writing has not only helped persuade those in other disciplines that discourse with economists is possible, but has also contributed prominently to their own

¹⁶If, in the distant future, an unsigned paper by Sen is discovered, one clue to its correct attribution will be the literary references. In my re-reading while writing this article, I noted Dante, T. S. Eliot, Robert Frost, O. Henry, King Lear, Stephen Leacock, Hugh MacDiarmid, Andrew Marvell, Arthur Miller, George Bernard Shaw, W. B. Yeats, and Drs Doolittle and Johnson.

thinking. I have referred to Rawls as a major influence on his work, and Rawls himself acknowledges, in his *A Theory of Justice*, that Sen has influenced his own thinking. What is remarkable is that Sen, in his forays into philosophy, has sharpened the questions being asked, without seeking to impose the economist's mode of analysis on other disciplines.

A fourth characteristic, and one which is increasingly rare, is that of *scholarship*. Sen sets his work firmly in the context of the literature. Readers can see how what Sen says relates to X's earlier contributions, and, even more unusually, how X's contribution relates to that of Y. Robert Sugden, in the review of *Inequality Reexamined* [1992], noted that text of 152 pages was accompanied by no fewer than 45 pages of bibliography. As Sugden says,

"It is a testimony to Sen's extraordinarily wide reading in economics, political theory, and philosophy . . . In acknowledging what he has learned from this literature – including what he has learned from his opponents – he is characteristically generous" (1993, p. 1948).

Finally, Sen has been willing to tackle uncomfortable subjects, and to challenge conventional economics. Indeed, he does so with relish. In some cases, he has been highly persuasive, carrying the field before him. In the public arena, his research has greatly influenced the *Human Development Report* produced by the United Nations Development Programme. In his analysis of hunger, Sen has emphasized the importance of the press and public debate in securing effective action, and he, together with Jean Drèze and others, has contributed greatly to that debate. On the other hand, in some cases, he has not so far carried the day: for instance, the Sen poverty index has yet to be widely adopted in official statistics.

Within the discipline of economics, he has been remarkably successful in arousing the interest of the profession in the issues on which he has concentrated, significantly affecting the evolution of the subject. Indeed, one of his key contributions has been to legitimize the investigation of certain topics – such as famine – that had previously been regarded by many as outside the profession's concerns. His own central position in the discipline has meant that when he has ignored the conventional lines of demarcation then graduate students have had the courage to follow.

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