Distinguished Guest Lecture

From Income Inequality to Economic Inequality

Amartya K. Sen*

1. Introduction

I begin by recounting a true story—a rather trivial and innocuous story, as it happens, but one with something of a lesson. Some years ago, when I went to give a lecture at another campus, I chose "Economic Inequality" as the title of my talk. On arrival, I found the campus covered with posters announcing that I was speaking on "Income Inequality." When I grumbled about it slightly, I encountered gentle, but genuine, amazement that I wanted to fuss about such "an insignificant difference." Indeed, the identification of economic inequality with income inequality is fairly standard, and the two are often seen as effectively synonymous in the economic literature. If you tell someone that you are working on economic inequality, it is quite commonly assumed that you are studying income distribution.

This implicit identification can be found in the philosophical literature as well. For example, in his interesting and important paper "Equality as a Moral Ideal," Harry Frankfurt (1987), the distinguished philosopher, provides a closely reasoned critique of what he calls economic egalitarianism, defining it as "the doctrine that there should be no inequalities in the distribution of money" (p. 21).

The distinction, however, is important. Many of the criticisms of economic egalitarianism as a value or a goal applies much more readily to the narrow concept of income inequality than it does to the broader notions of economic inequality. For example, giving a larger share of income to a person with more needs, say due to a disability, can be seen as militating against the principle of equalizing incomes, but it does not go against the broader precepts of economic equality since the greater need for economic resources due to the disability must be taken into account in judging the requirements of economic equality.

Well, the subject of this paper is precisely the difference between economic inequality and income inequality. It will be argued that we ought to pay much more attention than we conventionally do to economic inequality in an appropriately broad sense, taking note of the fact that income inequality, on which economic analysis of inequality so often concentrates, gives

a very inadequate and biased view of inequalities, even of those inequalities that can be powerfully influenced by economic policy. There is a serious gulf here, and the distinction, I would argue, is of considerable importance for economic practice as well as for economic theory. I shall also present some empirical examples, involving the United States as well as other countries, to illustrate the force of this distinction. The more difficult issue concerns the problems involved in having an appropriately broad notion of economic inequality that is both theoretically adequate and empirically usable. This question, too, I shall briefly try to address.

2. The Need for Going Beyond Income Inequality

A convenient point of departure is A. B. Atkinson's (1970) pioneering move in the measurement of inequality.[1] He assessed inequality of incomes by bringing in an overall social objective function and measured inequality of an income distribution through the social loss (in terms of equivalent income) from that distribution in comparison with a corresponding equal distribution. However, he took the individuals to be symmetrical and also did not explicitly consider what the individuals respectively get out of their incomes and other circumstances.[2]

There is a case for going beyond this structure and for examining the nature of individual advantages themselves as the constituent elements of social welfare (or, more generally, of social objectives). In this context, we have to take note of the heterogeneities of the individuals and of their respective nonincome circumstances.

The important point to note is that the valuation of income is entirely as a means to other ends and also that it is one means among others. A more inclusive list of means has been used by John Rawls in his theory of justice through his concentration on primary goods, which include rights, liberties and opportunities, income and wealth, and the social bases of self-respect" (Rawls 1971, pp. 60–65).[3] Income is, of course, a crucially important means, but its importance lies in the fact that it helps the person to do things that she values doing and to achieve states of being that she has reasons to desire. The worth of incomes cannot stand separated from these deeper concerns, and a society that respects individual well-being and freedom must take note of these concerns in making interpersonal comparisons as well as social evaluations.

The relationship between income (and other resources) on the one hand and individual achievements and freedoms on the other is not constant. Different types of contingencies lead to systematic variations in the conversion of incomes into the distinct functionings we can achieve (i.e., the various things we can do or be), and that affects the lifestyles we can enjoy. There are at least five important sources of parametric variation.

(1) *Personal heterogeneities:* People have disparate physical characteristics connected with disability, illness, age, or gender, making their needs diverse. For example, an ill person may

---

[1] See also Dalton (1920) and Kolm (1969).

[2] While Atkinson used the utilitarian form whereby social welfare was seen as the sum total of individual components that he called u_i, there is no need to identify u_i specifically with individual utilities. The social objective function is, however, assumed in this Atkinsonian formulation to be additively separable (on individual incomes), and this limiting assumption can be readily dispensed with in a generalized form of the Atkinson approach (see Sen 1973; Blackorby and Donaldson 1978, 1980).

[3] For a further broadening of the resources that we use, or can use, as means for pursuing our respective ends, see Dworkin (1981).

need more income to fight her illness than a person without such an illness would need. While the compensation needed for disadvantages will vary, some disadvantages may not be correctable even with more expenditure on treatment or care.

(2) *Environmental diversities:* Variations in environmental conditions, such as climatic circumstances (temperature ranges, rainfall, flooding, and so on), can influence what a person gets out of a given level of income.

(3) *Variations in social climate:* The conversion of personal incomes and resources into functionings is influenced also by social conditions, including public health care and epidemiology, public educational arrangements, and the prevalence or absence of crime and violence in the particular location. Aside from public facilities, the nature of community relationships can be very important, as the recent literature on social capital has tended to emphasize.[4]

(4) *Differences in relational perspectives:* The commodity requirements of established patterns of behavior may vary between communities, depending on conventions and customs. For example, being relatively poor in a rich community can prevent a person from achieving some elementary functionings (such as taking part in the life of the community) even though her income, in absolute terms, may be much higher than the level of income at which members of poorer communities can function with great ease and success. For example, to be able to "appear in public without shame" may require higher standards of clothing and other visible consumption in a richer society than in a poorer one (as Adam Smith [1776] had noted more than two centuries ago).[5] The same parametric variability may apply to the personal resources needed for the fulfillment of self-respect. This is primarily an intersocietal variation rather than an interindividual variation within a given society, but the two issues are frequently interlinked.

(5) *Distribution within the family:* Incomes earned by one or more members of a family are shared by all, nonearners as well as earners. The family is, thus, the basic unit for consideration of incomes from the point of view of their use. The well-being or freedom of individuals in a family will depend on how the family income is used in furtherance of the interests and objectives of different members of the family. Thus, intrafamily distribution of incomes is quite a crucial parametric variable in linking individual achievements and opportunities with the overall level of family income. Distributional rules followed within the family (e.g., related to gender or age or perceived needs) can make a major difference to the attainments and predicaments of individual members.[6]

3. Illustrations of Contrasts

I have presented elsewhere empirical examples of different types that illustrate the variability of the relation between incomes and achievements (Sen 1981, 1985a, 1995a, 1998). I shall take the liberty of dwelling on a few such illustrations to indicate what kind of contrasts may be involved.

Figure 1 presents the gross national product (GNP) per head and life expectancy at birth of six countries (China, Sri Lanka, Namibia, Brazil, South Africa, and Gabon) and one sizeable

---

[4] See particularly Coleman (1986) and Putnam, Leonardi, and Nanetti (1993).

[5] See also Runciman (1966) and Townsend (1979) for sociological analyses of the relativist aspects of well-being and achievements.

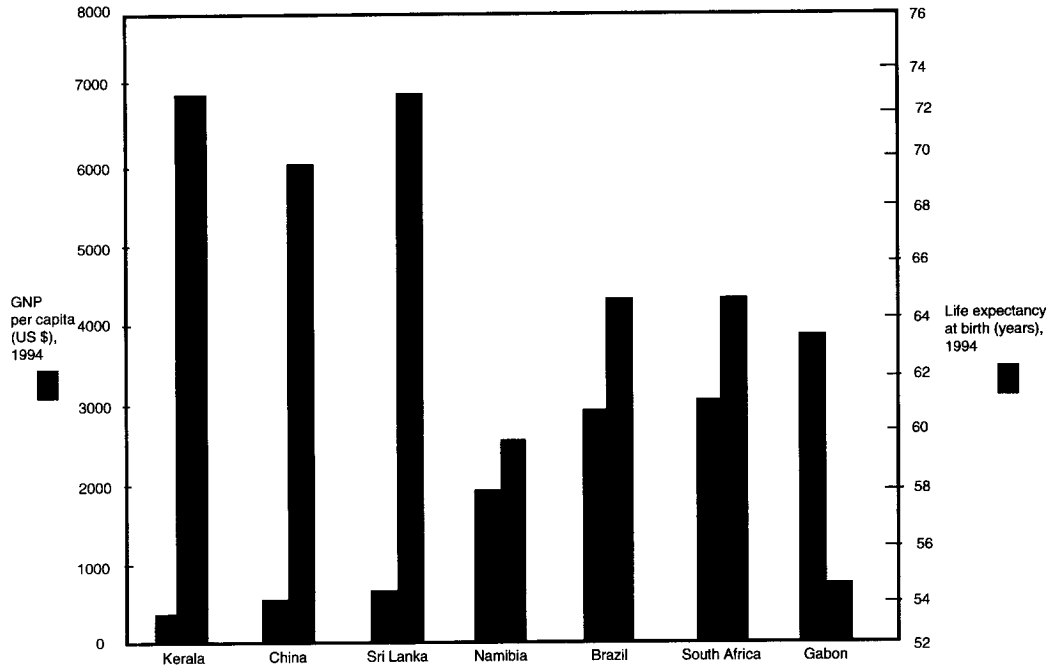[6] See Sen (1990) and the literature cited therein.

Figure 1. GNP per Capita (US $) and Life Expectancy at Birth, 1994. Sources: Country data, 1994, World Bank (1996); Kerala data, life expectancy, 1989–1993, sample registration system reported in Government of India (1997a); domestic product per capita, 1992–1993, Government of India (1997b).

state (Kerala) within a country (India).[7] The income-poor people of Kerala or China or Sri Lanka enjoy enormously higher levels of life expectancy than do the much richer populations of Brazil, South Africa, and Namibia, not to mention Gabon. Since life expectancy variations relate to a variety of economic influences, including epidemiological policies, health care, educational facilities, and so on, the reach of economic opportunities is much broader than that of income alone. I have had the occasion to discuss elsewhere how public policies in particular have been quite crucial in influencing the quality of life and longevity of different populations (see Sen 1981; Drèze and Sen 1989). In terms of inequality analysis, even the direction of the inequality points oppositely when we compare Kerala, China, and Sri Lanka on one side with Brazil, South Africa, Namibia, and Gabon on the other.

Figures 2 and 3 make a related, but differently focused, comparison, bringing in the U.S. itself. Even though the income per capita of African Americans is considerably lower than that of the American white population, African Americans are of course a great many times richer in income terms than the people of China or Kerala (even after correcting for cost-of-living differences). In this context, it is interesting to compare the survival prospects of African Americans vis-à-vis the immensely poorer Chinese or Indians in Kerala. American blacks do much better in terms of survival at low age groups (particularly in terms of infant mortality), but the picture changes over the years.

It turns out that, in fact, the Chinese and the Keralites decisively outlive American black men in terms of surviving to older age groups. Even American black women end up having

---

[7] While Kerala is merely a state rather than a country, nevertheless, with its population of 29 million, it is larger than the majority of countries in the world.
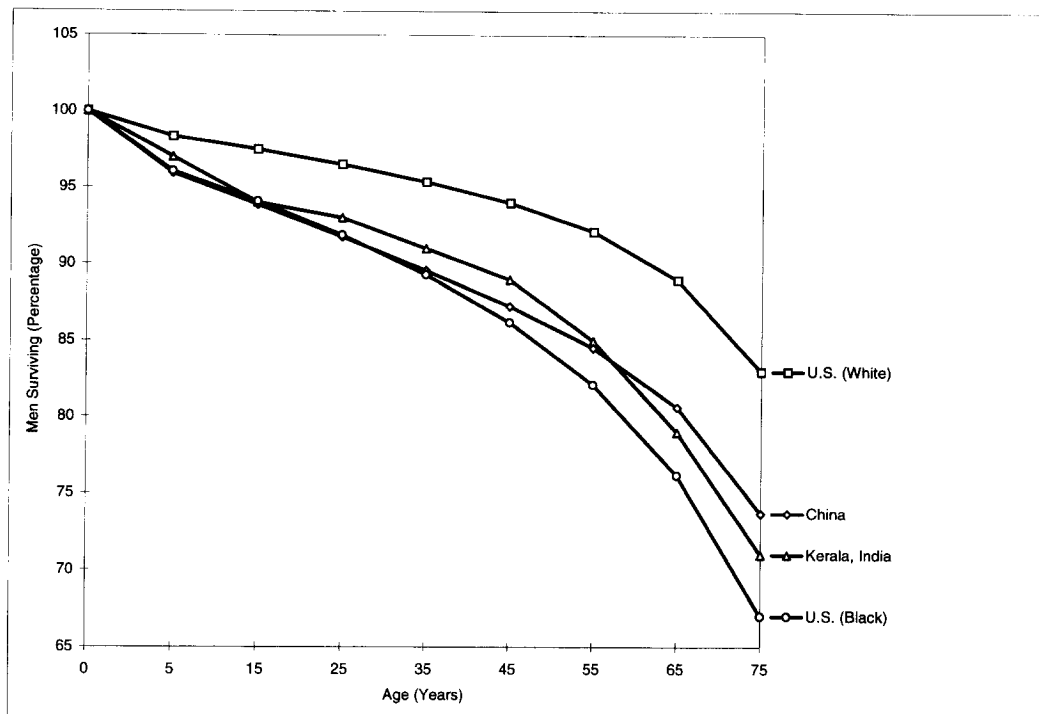
Figure 2. Variations in Male Survival Rates by Region. Sources: U.S., 1991–1993, U.S. Department of Health and Human Services (1996); Kerala, 1991, Government of India (1991); China, 1992, WHO (1994).

similar survival patterns for high ages as the Chinese and decidedly lower survival rates than the Indians in Kerala. So it is not only the case that American blacks suffer from relative deprivation in the income space (vis-à-vis American whites), they are absolutely more deprived than the much poorer Indians in Kerala and the Chinese (in the case of men) in terms of living to ripe, old ages. In explaining these differences between living standards judged by income per head and that judged by the ability to survive to higher ages, a number of causal issues are relevant (including medical insurance, public health care, elementary education, law and order, etc.) that are not unrelated to economic policies and programs.[8]

Figure 4 compares, for different states within India, the values of gross domestic product (GDP) per capita, literacy (female and male), life expectancy at birth (female and male), and total fertility rate. The last has eventual importance for population growth, but its inclusion here is mainly for its immediate role, at high levels, as a major restraint on the freedom and well-being that young women can enjoy when battered by continual bearing and rearing of children. Since the last is viewed as a negative influence on the quality of life, it is measured in the opposite (downward) direction from the zero line.

It is readily seen (as can also be confirmed by standard measures of statistical relations) that the relative values of GDP per capita figures are much at variance with the nonincome indices of aspects of quality of life (female literacy, male literacy, female life expectancy, male

---

[8] On this, see Sen (1993) and also the medical literature cited therein. See also the discussion that American black men from the Harlem district of rich New York fall (in terms of survival) not only behind the Chinese or the Indians in Kerala but also behind the famished population of Bangladesh.
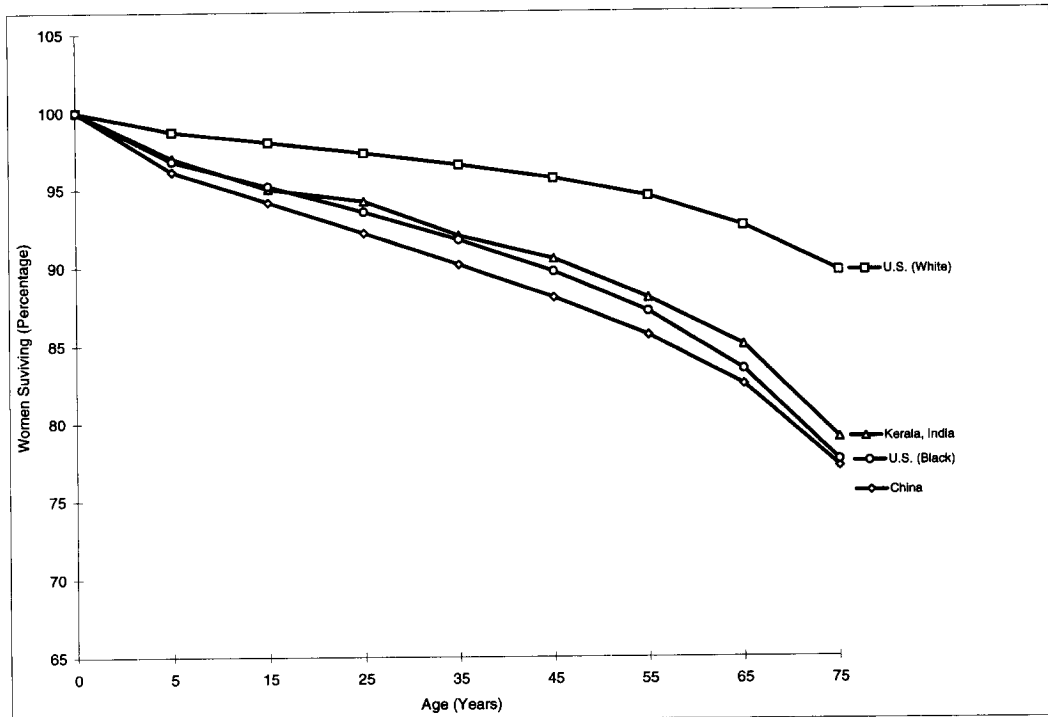
Figure 3. Variations in Female Survival Rates by Region. Sources: U.S., 1991–1993, U.S. Department of Health and Human Services (1996); Kerala, 1991, Government of India (1991); China, 1992, WHO (1994).

life expectancy, and low fertility rate), which all move very closely together. For example, the GDP figures would put Haryana and Punjab very much higher than Tamil Nadu and Kerala, but in terms of aspects of quality of life, exactly the opposite is the case.

As these illustrations exemplify (Figures 1–4) and as can be confirmed by other statistics (see, e.g., Sen 1985a, 1995a, 1998, and literature cited there), there are substantial differences between the income-based view and the nonincome indicators of quality of life. Inequality comparisons will yield very different results depending on whether we concentrate only on incomes or also on the impact of other economic and social influences on the quality of life.

A further issue, which I shall not take up in this paper (but that I have addressed elsewhere, particularly in Sen [1997]), concerns the severely negative impact of unemployment, especially persistent unemployment, on the lives that people can live.[9] This is an especially important issue for the assessment of quality of life and inequality in contemporary Europe. Even though unemployment benefits and social security may reduce the impact of the extraordinary levels of high unemployment on European income inequality in particular, the persistence of unemployment leads to many other kinds of deprivation (see Sen 1997 and literature cited therein) that are not reflected at all in the income statistics. An over-concentration on income inequality alone has permitted greater social and political tolerance of unemployment in Europe (and even some economic smugness vis-à-vis the achievement of low unemployment levels in the U.S.) that cannot be justified if a broader view of economic inequality is taken.

---

[9] See Darity and Goldsmith (1993), Goldsmith, Veum, and Darity (1996), and the literature cited therein.
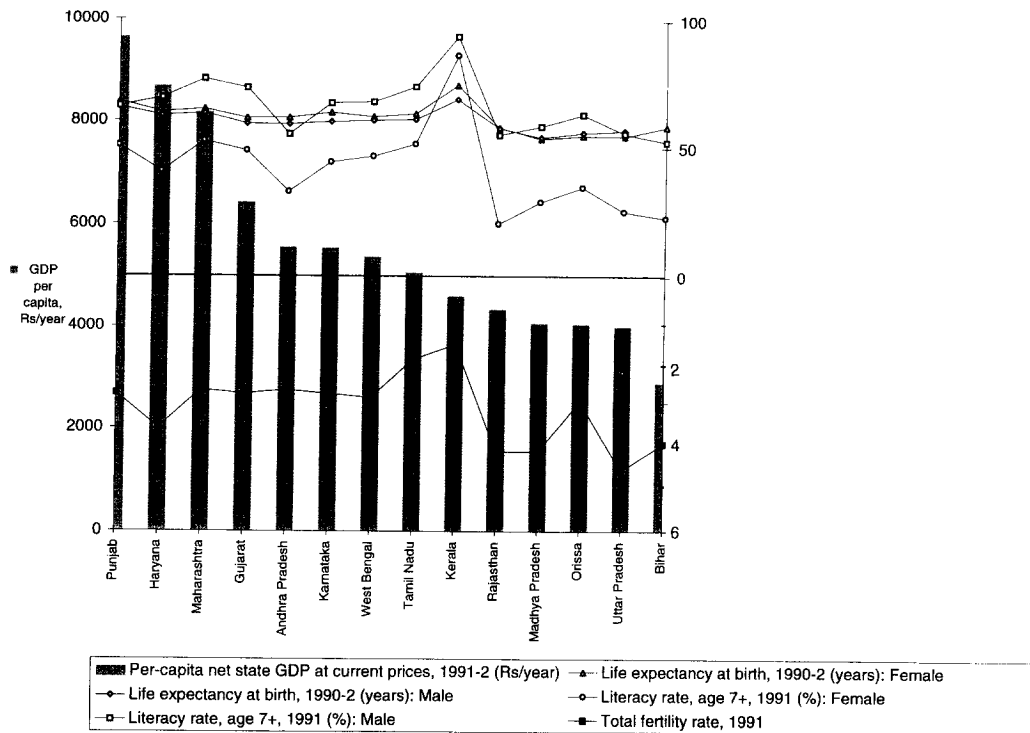
Figure 4. Selected Indicators for Indian States. Source: Drèze and Sen (1995, Table A.3)

4. Interpersonal Utility Comparisons and Inequality

The illustrations just presented of contrast between income and achievement deal with particular classes of indicators of quality of life (longevity, survival, literacy, fertility, employment status).[10] Illustrations can also be provided to exemplify variability in the relation between income and other substantive achievements such as being healthy, being well-nourished, taking part in the life of the community, and so on.

The acceptance of variability between income and achievement is not, however, an adequate ground for a definitive rejection of income inequality as the center of our attention in inequality assessment—without considering whether an alternative approach would be workable and satisfactory. Practical economics, no less than politics, is the art of the possible, and that issue remains, even when the need for going beyond income inequality is well accepted. Can we really get an alternative, practically usable approach based on the broader concentration on functionings rather than incomes?

Before taking on this issue fully, I would like to examine a related question, proposing a different alternative to the focus on incomes. Are we not likely, it may be sensibly asked, to be served better by opting for a more familiar notion, like utility, in shifting away from income inequality? Why not the inequality of utilities as the central focus of attention for inequality analysis? Indeed, just such a focus has been proposed and elegantly explored already by James

---

[10] These variables have played substantial roles, under the visionary leadership of Mahbub ul Haq (and now Richard Jolly), in *Human Development Reports* of the United Nations (see, for example, UNDP 1990, 1995, 1997), with which I have been privileged to be associated; see also Anand and Sen (1995, 1997).

Meade (1976) in his exploration of "the just economy." So the utility-based evaluation of inequality should be examined first, before stepping on to the less tried, and perhaps more hazardous, field of functionings (or the freedom to function).

The possibility of interpersonal comparisons of utilities was, of course, famously challenged by Lionel Robbins (1938) and others in the high days of simple positivist criticism of utilitarian welfare economics. Certainly, the claim to a high scientific status of utility comparisons is compromised by many practical difficulties in relating observations to firm and indisputable conclusions regarding interpersonal rankings of utilities and utility differences. On the other hand, comparisons of pleasures and happiness are made in our day-to-day reflections and discourse, and there is considerable discipline in the making of such comparisons. Indeed, as Donald Davidson (1986) has pointed out, the nature of our understanding and communication regarding intrapersonal comparisons of states of happiness and desires are not radically different from the corresponding interpersonal exercises. Also, interpersonal comparison of utilities need not take an all-or-nothing form, and it is possible to have "partial interpersonal comparability" with a rigorous analytical structure (see Sen 1970a, b).

The difficult issue in basing inequality analysis on interpersonal comparisons is not so much the impossibility of making such comparisons but the possibility of being misled by such comparisons (particularly about important differences in the substantive deals that people get and the real predicaments from which they suffer). Our ability to take pleasure in very adverse circumstances tends to adapt to the hardship of circumstances so that the badly placed underdogs do not typically spend their lives weeping over what they have missed. People learn to make the most of small opportunities and to cut desires to size, that is, to levels that are realistic under the circumstances. Thus, in the scale of pleasures and desire fulfillment, the deprivation of the persistent underdog finds rather muffled and muted expression. Deprived people, varying from subjugated housewives in sexist societies to the hopelessly poor in strongly stratified economies, come to terms with their deprivation, and the psychological indicators of pleasure or desire fulfillment may fail to reflect the extent of real deprivation that these people suffer.[11]

There is, I believe, force in this criticism of relying on interpersonal comparison of pleasures and desire fulfillment for making judgments about inequality or injustice. However, this critique does not touch at all the more modern definition of utility as a numerical representation of individual choice behavior. In this interpretation, to say that a person gets more utility from x than from y is not essentially different from saying that, given the straightforward choice between x and y, the person would choose x.[12] The malleability or adaptation of pleasure-taking ability need not compromise the perspective of utility as real-valued representation of preference.

However, if we see utility only as a numerical representation of each person's choice behavior, there is, then, no basis here for interpersonal comparisons of utility since each person's choice behavior is a distinct and separate entity. My choices may well reveal that I prefer a banana to an apple, but no choice of mine would, in any obvious sense, reveal whether I prefer to be someone else. Interpersonal comparisons deal with objects of comparison that are not objects of actual choice.[13]

---

[11] I have discussed this issue more fully in Sen (1984, 1985a, b).

[12] The formulation can be made more complex through considering nonbinary choices, but the basic understanding of utility as preferred choice remains similar (see Sen 1982).

[13] It is, of course, possible to think of hypothetical choices in which becoming someone else may be imaginatively involved (see, e.g., Harsanyi 1955). Such comparisons may be enlightening as a thought experiment, but they are unlikely to become practical methods for interpersonal comparisons.

This point is often missed when it is presumed that similarity of choice behavior over commodity space must reveal a congruence of utilities. It is often presumed that, when two persons are observed to have the same demand function, then they must be seen as having the same level of interpersonally comparable utility for any given commodity bundle. Indeed, much of real-income comparison proceeds on the basis of identifying individual advantages with the commodity basket enjoyed, evaluated by a shared preference relation, and that procedure is not illegitimate for making situational comparisons of different persons' opulence.[14] But to interpret them as utility comparison, going beyond opulence, would be a complete *non sequitur*.[15] If instead of assuming that each person gets the same utility as others do from the same commodity bundle, it were assumed that one gets exactly one tenth of the utility that another gets from each respective bundle, then that too would be perfectly consistent with all the behavioral observations (including the shared demand function). Congruent demand functions tell us nothing about the congruence of utility functions, and this follows generally from the fact that the observations on which demand functions are based do not lend themselves to any presumption about interpersonal comparisons of well-being (only of commodity holdings and opulence).

This must not be seen as just a fussy difficulty of theoretical interest; it can make a very big difference in practice as well. Even if a person who is disabled or ill or depressed happens to have the same demand function as another who is not disadvantaged in this way, it would be quite absurd to assume that she is having exactly the same utility or well-being from a given commodity bundle as the other can get from it. To attribute the same utility function to each and to treat that as the basis of interpersonal comparison for the analysis of inequality or injustice would be both epistemologically unsound and ethically unfair.

Utility cannot, therefore, serve as a satisfactory basis for interpersonal comparison for inequality analysis, and this holds no matter whether we interpret utility as pleasure or as desire fulfillment or as a numerical representation of choice behavior. Indeed, as I have tried to discuss, attempts to make that use arbitrarily can be pernicious for judgments of equity and justice.

5. Quality of Life, Functionings, and Capabilities

The choice of nonutility variables in terms of which inequality can be judged has been a matter of some interest in recent years, and such concepts as the quality of life or freedom of living and other such notions have been invoked.[16] It is, however, important to emphasize that focusing on the quality of life rather than on income or wealth or on psychological satisfaction is not new in economics. Indeed, the origin of the subject of economics was strongly motivated by the need to study the assessment of and causal influences on the conditions of living.[17] The motivation is stated explicitly, with reasoned justification, by Aristotle, but it is also strongly reflected in the early writings on national accounts and economic prosperity by William Petty, Gregory King, Francois Quesnay, Antoine Lavoisier, Joseph Louis Lagrange, and others. While the national accounts devised by these pioneers established the foundations of the modern

---

[14] I have discussed the welfare-economic reasoning underlying such comparisons in Sen (1976, 1979).

[15] Explanations as to why this is an error have been helpfully discussed by several authors, including Samuelson (1947), Graaff (1957), Gintis (1969), and Fisher and Shell (1972). Evidently, this has not prevented regular recurrence of the error.

[16] See the literature considered in Nussbaum and Sen (1993).

[17] See Sen (1987).

concept of income, the focus of their attention was never confined to this one concept. They were also very aware of the basic issue that the importance of income is instrumental and circumstantially contingent rather than intrinsic and categorical.[18]

In traditional welfare economics, there has been interest both in individual utilities and in individual incomes. When individuals are taken to be symmetrical, the two are closely linked. John Rawls has pointed to the important issue that income is not the only versatile means that facilitates a person's pursuit of his or her respective objectives. He has focused instead, as was stated earlier, on the broader category of primary goods, which are general-purpose means that help anyone to promote his or her ends (including "rights, liberties and opportunities, income and wealth, and the social bases of self-respect").

The concentration on primary goods in the Rawlsian framework relates to his accounting of individual advantage in terms of the opportunities they enjoy to pursue their respective objectives.[19] Rawls's Difference Principle, which is part of his theory of justice as fairness, assesses efficiency as well as equity in terms of the respective holdings of primary goods, represented by an index.

The broadening of the narrow concentration on incomes alone involved in this move is significant, but this widening of the informational focus from incomes to primary goods is not adequate to deal with all the relevant variations in the relationship between resources and functionings. Primary goods themselves are mainly various types of general resources, and the use of these resources to generate the capability to do things is subject to distinct types of variations (as has been already discussed), including personal heterogeneities, environmental diversities, variations in social climate, and differences in relational perspective. We can have complete equality of the chosen index of primary goods, and yet some people may be immensely more deprived than others because of age, disabilities, proneness to illness, epidemiological conditions, and so on.

I have tried to argue for some time now (Sen 1980, 1985a, b, 1992) that, for many purposes, the appropriate space is neither that of utilities (as claimed by welfarists) nor that of primary goods (as demanded by Rawls). If the object is to concentrate on the individual's real opportunity to pursue her objectives, then account would have to be taken not only of the primary goods the person holds but also of the relevant personal characteristics that govern the conversion of primary goods into the person's ability to promote her ends.[20] For example, a person who is disabled may have a larger basket of primary goods and yet have less chance to lead a normal life (or to pursue her objectives) than an able-bodied person with a smaller basket of primary goods. Similarly, an older person or a person more prone to illness can be more disadvantaged in a generally accepted sense even with a larger bundle of primary goods.[21]

---

[18] On these and related matters, see Sen (1987). The focus of attention of William Petty, who had experimented both with the income method and the expenditure method in estimating national income, included "the Common Safety" and "each Man's particular Happiness." Petty's explicitly stated objective for undertaking his study related directly to the assessment of the condition of living of people and combined scientific investigation with a motivating dose of 17th century politics ("to show" that "the King's subjects are not in so bad a condition as discontented Men would make them").

[19] In a related line of argument, Dworkin (1981) has argued for equality of resources, broadening the Rawlsian coverage of primary goods to include insurance opportunities to guard against the vagaries of brute luck.

[20] A person does have some opportunity of changing the conversion relations, for example, by cultivating special tastes or by learning to use resources better. But, nevertheless, there are limits that constrain the extent to which such shifts can be brought about.

[21] On the nature and pervasiveness of such variability, see Sen (1980, 1985b, 1992). The problem of different needs
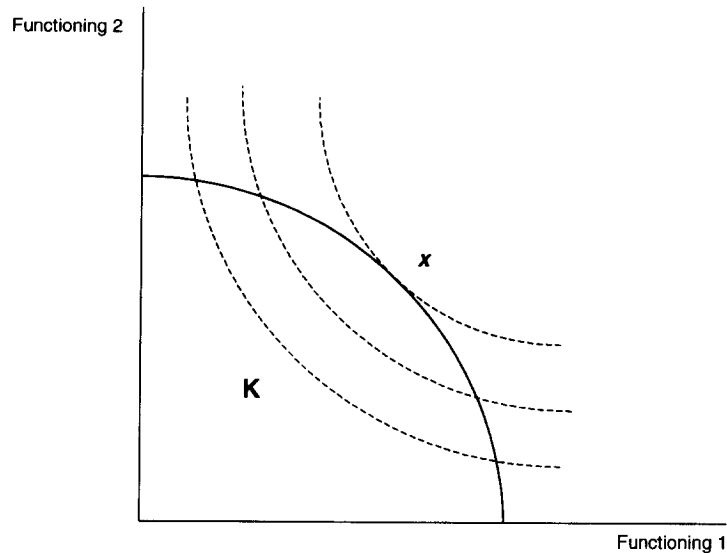
Figure 5. Functioning Vectors and the Preference Map

The concept of functionings, which has distinctly Aristotelian roots, reflects the various things a person may value doing or being. The valued functionings may vary from such elementary ones as being adequately nourished and being free from avoidable disease to very complex activities or personal states, such as being able to take part in the life of the community and having self-respect.[22]

The extent of each functioning enjoyed by a person may be represented by a real number and, when this is the case, a person's actual achievement is given by a functioning vector in an n-dimensional space of n functionings (presuming finiteness of distinct functionings). When numerical representation of each functioning is not possible, the analysis has to be done in terms of the more general framework of seeing the functioning achievements as a functioning n-tuple and the capability set as a set of such n-tuples in the appropriate space (this will, then, not be a vector space). The set of alternative functioning vectors available to her for choice is called her capability set. While the combination of functionings (strictly, n-tuples) a person undertakes reflects her achievements, the capability set represents the freedom to achieve: the alternative functioning combinations from which this person can choose.

Figure 5 illustrates a functioning space (two dimensional), with the capability set of a person being given by region K, and from this capability set K, the person chooses one functioning vector x (though this need not necessarily be unique). It may be useful to think of choice in this space in terms of an indifference map of valued living defined over the functioning

---

considered in *OEI-1973* relates to this general issue. On the relevance of taking note of disparate needs in resource allocation, see also Doyal and Gough (1991), Ebert (1992, 1994), Balestrino (1994, 1997), Chiappero Martinetti (1994, 1997), Fleurbaey (1994, 1995a, b), Granaglia (1994), Balestrino and Petretto (1995), Shorrocks (1995), Nolan and Whelan (1996), among other contributions.

[22] See Sen (1984, 1985a, 1987, 1992). This approach has clear linkages with Adam Smith's (1776) analysis of necessities (see Sen 1981, 1984) and with Aristotle's discussions of well-being in *Nicomachean Ethics* and in *Politics* (see Nussbaum 1988, 1993). See also Mill (1859) and Marx (1875). The conceptual broadening has powerful implications on practical procedures for assessing advantage and deprivation; see also Crocker (1992), Nussbaum and Sen (1993), Nussbaum and Glover (1995), and Nolan and Whelan (1996).

vectors, and x can then be seen as belonging to the highest reachable indifference curve (as indicated).[23] The focus of this capability approach could be either on the realized functionings (what a person is actually able to do) or on the set of alternatives she has (her real opportunities).

I shall not go into the details of the approach here (which I have tried to present elsewhere [Sen 1985a, 1992, 1993]). But it is useful to ask whether the focus on capability is likely to be very different from that on functionings. The capability approach can be used either with a focus on what options a person has—given by the whole capability set—or on the actual functioning combination she chooses—given by the chosen functioning vector. In the former procedure, what may be called the options application, the focus can be on the entire K, whereas in the latter, the choice application, the concentration is more narrowly on x. The options application is directly concerned with the freedom to choose over various alternatives, whereas the choice application is involved with the alternative that is actually chosen. Both the versions of the capability approach have been used in the literature, and sometimes they have been combined.[24]

By a well-established tradition in economics, the real value of a set of options lies in the best use that can be made of them and, given maximizing behavior and the absence of uncertainty, the use that is actually made. The use value of the opportunity, then, lies derivatively on the value of one element of it (to wit, the best option or the actually chosen option).[25] In this case, the focusing on chosen functioning vector coincides with concentration on the capability set. With this type of elementary evaluation, the two uses of the capability approach share not only the identification of a relevant space (that of functionings) but also the focal variable in that space (the chosen functioning vector).[26]

However, the options application can be used in other ways as well since the value of a set need not invariably be identified with the value of the best, or the chosen, element of it. It is possible to attach importance to having opportunities that are not taken up. This is a natural direction to go if the process through which outcomes are generated is of significance of its own. Indeed, choosing itself can be seen as a valuable functioning and having an x when there is no alternative may be sensibly distinguished from choosing x when substantial alternatives exist.[27] The importance of this type of consideration lies more in drawing attention to broader concerns than in offering a quick resolution of interpersonal comparison of freedoms (and thus of overall individual advantages that take note of the significance of freedom).

---

[23] The use of such an indifference map in explaining valuation of functionings may be of considerable pedagogic value, especially in moving from the familiarity of the commodity space to the unaccustomed functioning space. It is, nevertheless, important to recognize that the nature of the indifference map in the functioning space may not altogether mirror what we standardly presume in the case of commodity space. In particular, there may be considerable areas of incompleteness as well as fuzziness (see Sen 1985a). The recent literature on fuzzy set theory can be helpful in analyzing the valuation of functioning vectors and capability sets (see particularly Chiappero Martinetti 1994, 1997; Delbono 1989; Cerioli and Zani 1990; Balestrino 1994; Balestrino and Chiappero Martinetti 1994; Ok 1995; Casini and Bernetti 1997; among other contributions).

[24] See the rather extensive literature on this referred to in Foster and Sen (1997).

[25] This approach is called elementary evaluation of the capability set; on the nature and scope of elementary evaluation, see Sen (1985a).

[26] Cohen's (1989, 1990, 1995) arguments for concentrating on what he calls midfare also lead to this particular focus; see also Arneson (1989, 1990).

[27] See Sen (1985a, b). There remains the more difficult issue of determining how this process consideration should be incorporated. For various alternative proposals and also axiomatized formulas, see Suppes (1987), Pattanaik and Xu (1990), Sen (1991a), Foster (1993), Arrow (1995), Herrero (1995), Puppe (1995), among others.

6. Weights, Valuations, and Explicitness

I turn now to a crucial methodological issue that has received much attention in recent discussions involving the capability approach and related proposals. The heterogeneity of functionings involves the need to weigh them against one another. This would apply to all approaches geared to functionings, whether the concentration is on realized functioning vectors x (as with the choice application) or on the capability sets K (as with the options application).[28]

Is this weighting requirement a special difficulty associated with the capability approach? This cannot be the case since heterogeneity of factors that influence individual advantage is a pervasive feature of actual evaluation. While we can decide to close our eyes to this issue by simply assuming that there is something homogeneous (e.g., income or utility) in terms of which everyone's overall advantage can be judged and interpersonally compared (and that variations of needs, personal circumstances, etc., can be, correspondingly, assumed away), this does not resolve the problem—it only evades it.

Comparisons of real income involve reduction of bundles of different commodities into points on a real line and, in judging comparative individual advantages, there is the further problem of interpersonal comparisons taking note of variations of individual conditions and circumstances. As was discussed earlier (see section 4), even when each person's preference is taken to be the ultimate arbitrator of well-being for that person and even when, to take a very special case, everyone has the same demand function or preference map, the comparison of market valuations of commodity bundles (or their relative placing on a shared system of indifference map in the commodity space) may tell us rather little about interpersonal comparisons of well-being.

In evaluative traditions involving fuller specification, considerable heterogeneity is explicitly admitted. For example, in Rawlsian analysis, primary goods are taken to be constitutively diverse (including "rights, liberties and opportunities, income and wealth, and the social bases of self-respect"), and Rawls (1971) deals with them through an overall index of primary goods holdings.[29] While a similar exercise of judging over a space with heterogeneity is involved both in the Rawlsian approach and in the use of functionings, the former is informationally poorer, for reasons discussed already, because of the parametric variation of resources and primary goods vis-à-vis the opportunity of achieving high quality of living.

The problem of valuation is not, however, one of an all-or-nothing kind. Some judgments, with incomplete reach, follow immediately from the specification of a focal space. When some functionings are selected as significant, such a focal space is specified, and the relation of dominance itself leads to a partial ordering over the alternative states of affairs. If person i has more of a significant functioning than person j and at least as much of all such functionings, then i clearly has a higher valued functioning vector than j has. This partial ordering can be extended by further specifying the possible weights. A unique set of weights will, of course,

---

[28] In the latter case, there is the further task of comparing sets rather than points in this space, and it involves the additional issue that the importance of freedom can stretch well beyond the value of the particular element that is chosen (except in the special case of elementary evaluation).

[29] In analogy with Arrow's (1951) impossibility theorem and its single-profile extensions, various impossibility theorems have been presented in the literature about the existence of satisfactory overall indices of Rawlsian primary goods (see Plott 1978; Gibbard 1979; Blair 1988). Informational limitations play a crucial part in precipitating these results (as in the case of Arrow's theorem). The case against imposing such informational limitations is discussed in Sen (1991b), which reduces the rub of these alleged impossibility results, applied to Rawlsian procedures.
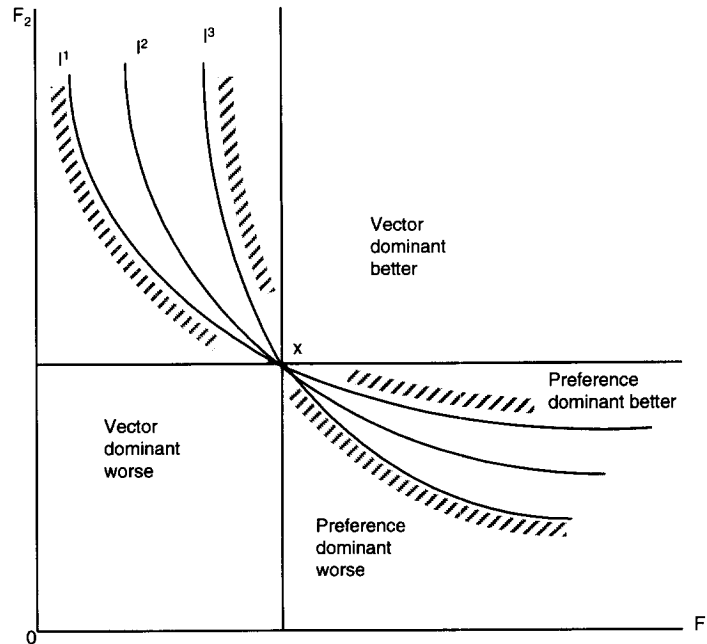
Figure 6. Functioning Vectors and Dominance

be sufficient to generate a complete order, but it is typically not necessary. Given a range of weights on which there is agreement (i.e., when it is agreed that the weights are to be chosen from a specified range, even without any agreement as to the exact point on that range), there will be a partial ordering based on the intersection of rankings (see Figure 6). This partial ordering will get systematically extended as the range is made more and more narrow. Somewhere in the process of narrowing the range, possibly well before the weights are unique, the partial ordering will become complete.[30] But even with an incomplete ordering, many decision problems can be adequately resolved, and even those that are not fully resolved can be substantially simplified (through the rejection of dominated alternatives).

It is thus crucial to ask, in any evaluative exercise of this kind, how the weights are to be selected. This judgmental exercise can be resolved only through reasoned evaluation. For a given person who is making his or her own judgments, the selection of weights will require reflection rather than interpersonal agreement or a consensus. However, in arriving at an agreed range for social evaluation (e.g., in social studies of poverty), there has to be some kind of a reasoned consensus on weights or at least on a range of weights. This is a social choice exercise and requires public discussion and a democratic understanding and acceptance.[31] It is not a special problem that is associated only with the use of the functioning space.

---

[30] Analytical correspondences between systematic narrowing of the range of weights and monotonic extension of the generated orderings have been explored in Sen (1970a, b, 1982), Blackorby (1975), Fine (1975), and Basu (1980). The use of the intersection approach (see Sen 1973; Foster and Sen 1997) relates directly to this procedure. The approach of intersection quasi-orderings can be combined together with "fuzzy" representation of the valuation as well as measurement of functionings (see Casini and Bernetti 1997; Chiappero Martinetti 1994, 1997).

[31] This issue and its connection with both social choice theory and public choice theory are discussed in my presidential address to the American Economic Association (Sen 1995b).

7. A Concluding Remark

The argument for shifting our attention from income inequality to economic inequality relates to the presence of causal influences on individual well-being and freedom that are economic in nature but that are not captured by the simple statistics of incomes and commodity holdings. The case for such broadening of informational focus also entails the need to pay evaluative attention to heterogeneous magnitudes and calls for the derivation of partial orderings based on explicit or implicit public acceptance. The normative force of this acceptance rests substantially on the quality and reach of public discussions on matters of central social concern. The subject of this essay, though nominally about inequality, is ultimately as much about the nature and importance of public discussion on social evaluation.

In matters of public judgment, there is no real escape from the evaluative need for public discussion. The work of public valuation cannot be replaced by some "super clever" assumption. Some assumptions that give the appearance of working very well operate through hiding the choice of values and weights in some constructed opaqueness. For example, the assumption, often implicitly made, that two persons with the same demand function must have the same relation between commodity bundles and well-being (no matter whether one is ill and the other not, one disabled and the other not, etc.) is basically a way of evading the consideration of significant influences on well-being. That evasion becomes transparent, as I have tried to illustrate, when we supplement income and commodity data by information of other types (including matters of life and death).

The exercise need not, however, be as exacting as it may first appear and as it certainly would be if we were not to settle for anything less than getting complete orderings of interpersonal advantages and inequalities. Our values about inequality aversion are not typically of the fine-tuning variety, getting the level of inequality "just right," taking note of all its pros and cons. Rather, the engagement is mainly about the avoidance of substantial inequalities and serious injustice.

As material for public discussion and for informed consensus or acceptance, the need is not so much for a complete ordering of interpersonal advantages and of levels of inequality (which would be inevitably based on some crude assumptions and evasions) but for usable partial orderings that capture the big inequalities in a clear way, taking note of the various significant concerns that go well beyond the commodity space. The focus has to be on the reach and relevance of partial orderings that can be cogently derived and used. Insistence on completeness can be an enemy of informed and democratic decision making.

References

Anand, S., and A. K. Sen. 1995. Gender inequality in human development: theories and measurement. Working Paper No. 95.05, Center for Population and Development Studies, Harvard University, Cambridge, MA.

Anand, S., and A. K. Sen. 1997. Concepts of human development and poverty: A multidimensional perspective. Working Paper, Center for Population and Development Studies, Harvard University, Cambridge, MA.

Arneson, R. 1989. Equality and equality of opportunity for welfare. *Philosophical Studies* 56:77–93.

Arneson, R. 1990. Liberalism, distributive subjectivism, and equal opportunity for welfare. *Philosophy and Public Affairs* 19:158–94.

Arrow, K. J. 1993. *Social choice and individual values.* 2nd edition. New York: Wiley.

Arrow, K. J. 1995. A note on freedom and flexibility. In *Choice, welfare and development: A festschrift for Amartya K. Sen*, edited by K. Basu, P. Pattanaik, and K. Suzumura. Oxford, UK: Clarendon Press.

Atkinson, A. B. 1970. On the measurement of inequality. *Journal of Economic Theory* 2:244–63.

Balestrino, A. 1994. Poverty and functionings: Issues in measurement and public action. *Giornale degli Economisti e Annali di Economia* 53:389–406.

Balestrino, A. 1997. A note on functioning-poverty in affluent societies. *Notizie di Politeia* 12:97–105.

Balestrino, A., and E. Chiappero Martinetti. 1994. Poverty, differentiated needs, and information. Mimeographed, University of Pisa and University of Pavia.

Balestrino, A., and A. Petretto. 1994. Optimal taxation rules for 'functioning'-inputs. *Economic Notes* 23:216–32.

Basu, K. 1980. *Revealed preference of government.* Cambridge, UK: Cambridge University Press.

Blackorby, C. 1975. Degrees of cardinality and aggregate partial Ordering. *Econometrica* 43:845–52.

Blackorby, C., and D. Donaldson. 1978. Measures of relative equality and their meaning in terms of social welfare. *Journal of Economic Theory* 18:59–80.

Blackorby, C., and D. Donaldson. 1980. A theoretical treatment of indices of absolute inequality. *International Economic Review* 21:107–36.

Blair, D. H. 1988. The primary-goods indexation problem in Rawls' *Theory of justice. Theory and Decision* 24:239–52.

Casini, L., and I. Bernetti. 1997. Environment, sustainability, and Sen's theory. *Notizei di Politeia* 12:55–78.

Cerioli, A., and S. Zani. 1990. A fuzzy approach to the measurement of poverty. In *Income and wealth distribution, inequality and poverty,* edited by C. Dagum and M. Zenga. New York: Springer.

Chiappero Martinetti, E. 1994. A new approach to evaluation of well-being and poverty by fuzzy set theory. *Giornale degli Economisti e Annali di Economia* 53:367–88.

Chiappero Martinetti, E. 1997. Standard of living evaluation based on Sen's approach: Some methodological suggestions. *Notizie di Politeia,* 12:37–53.

Cohen, G. A. 1989. On the currency of egalitarian justice. *Ethics* 99:906–44.

Cohen, G. A. 1990. Equality of what? On welfare, goods and capabilities. *Recherches Economiques de Louvain* 56: 357–82.

Cohen, G. A. 1995. *Self-ownership, freedom, and equality.* Cambridge, UK: Cambridge University Press.

Coleman, J. S. 1986. *Individual interests and collective action: Selected essays.* Cambridge, UK: Cambridge University Press.

Crocker, D. 1992. Functioning and capability: The foundations of Sen's and Nussbaum's development ethic. *Political Theory* 20:584–612.

Dalton, H. 1920. The measurement of the inequality of incomes. *Economic Journal* 30:348–61.

Darity, W., Jr., and A. Goldsmith. 1993. Social psychology and the theoretical foundations of unemployment hysteresis. *Journal of Post Keynesian Economics* 16:55–72.

Davidson, Donald. 1986. Judging interpersonal interests. In *Foundations of social choice theory,* edited by J. Elster and A. Hylland. Cambridge, UK: Cambridge University Press, pp. 195–211.

Delbono, F. 1989. Poverta come incapacita: Premesse teoriche, identificazione e misurazione. *Rivista Internazionale di Scienze Sociali* 97.

Doyal, L., and I. Gough. 1991. *A theory of human need.* New York: The Guilford Press.

Drèze, J., and A. K. Sen. 1989. *Hunger and public action.* Oxford, UK: Clarendon Press.

Drèze, J., and A. K. Sen. 1995. *India: Economic development and social opportunity.* Oxford, UK: Clarendon Press.

Dworkin, R. 1981. What is equality? Part 1: Equality of welfare, and What is equality? Part 2: Equality of resources. *Philosophy and Public Affairs* 10:185–246; 283–345.

Ebert, U. 1992. On comparisons of income distributions when household types are different. Economics Discussion Paper No. V-86-92, University of Oldenberg.

Ebert, U. 1994. Social welfare when needs differ: An axiomatic approach. Unpublished paper, Department of Economics, University of Oldenberg.

Fine, B. J. 1975. A note on interpersonal aggregation and partial comparability. *Econometrica* 43:169–72.

Fisher, F. M., and K. Shell. 1972. *The economic theory of price indices.* New York: Academic Press.

Fleurbaey, M. 1994. On fair compensation. *Theory and Decision* 36:277–307.

Fleurbaey, M. 1995a. Three solutions for the compensation problem. *Journal of Economic Theory* 65:505–21.

Fleurbaey, M. 1995b. Equality and responsibility. *European Economic Review* 39:683–89.

Foster, J. E. 1993. Notes on effective freedom. Unpublished paper, presented at the Stanford Workshop on Economic Theories of Inequality, sponsored by the MacArthur Foundation.

Foster, J. E., and Amartya Sen. 1997. *On economic inequality after a quarter century.* Oxford, UK: Clarendon Press.

Frankfurt, H. 1987. Equality as a moral ideal. *Ethics* 98:21–43.

Gibbard, A. 1979. Disparate goods and Rawls's difference principle: A social choice theoretic treatment. *Theory and Decision* 11:267–88.

Gintis, H. 1969. Alienation and power: Toward a radical welfare economics. Ph.D. dissertation, Harvard University, Cambridge, MA.

Goldsmith, A., J. R. Veum, and W. Darity, Jr. 1996. The psychological impact of unemployment and joblessness. *Journal of Socio-Economics* 25:333–58.

Government of India. 1991. *Sample registration system: Fertility and mortality indicators.* New Delhi.

Government of India. 1997a. *Women in India: A statistical profile.* New Delhi: Department of Education.

Government of India. 1997b. *Economic survey 1996–97.* New Delhi: Ministry of Finance.

Graaff, J. Van de. 1957. *Theoretical welfare economics.* Cambridge, UK: Cambridge University Press.

Gragnalia, E. 1994. More or less equality? A misleading question for social policy. *Giornale degli Economisti e Annali di Economia* 53:349–66.

Harsanyi, J. C. 1955. Cardinal welfare, individualistic ethics and interpersonal comparisons of utility. *Journal of Political Economy* 63:309–21.

Herrero, Carmen. 1995. Capabilities and utilities. Unpublished paper, University of Alicante and IVIE, Spain.

Kolm, S. C. 1969. The optimal production of social justice. In *Public economics,* edited by J. Margolis and H. Guitton. London: Macmillan.

Marx, K. 1875. *Critique of the Gotha program.* English translation, New York: International Publishers, 1938.

Meade, J. E. 1976. *The just economy.* London: Allen and Unwin.

Mill, J. S. 1859. *On liberty.* Republished, Harmondsworth: Penguin Books, 1974.

Nolan, B., and C. T. Whelan. 1996. *Resources, deprivation, and poverty.* Oxford, UK: Clarendon Press.

Nussbaum, M. 1988. Nature, function, and capability: Aristotle on political distribution. *Oxford Studies in Ancient Philosophy,* Supplementary volume.

Nussbaum, M. 1993. Non-relative virtues: An Aristotelian approach. In Nussbaum and Sen (1993).

Nussbaum, M., and J. Glover. 1995. *Women, culture, and development: A study of human capabilities.* Oxford, UK: Clarendon Press and New York: Oxford University Press.

Nussbaum, M., and A. K. Sen, eds. 1993. *The quality of life.* Oxford, UK: Clarendon Press.

Ok, E. 1995. Fuzzy measurement of income inequality: A class of fuzzy inequality measures. *Social Choice and Welfare* 12:111–36.

Pattanaik, P., and Y. Xu. 1990. On ranking opportunity sets in terms of freedom of choice. *Recherches Economques de Louvain* 56:383–90.

Plott, C. 1978. Rawls' theory of justice: An impossibility result. In *Decision theory and social ethics,* edited by H. W. Gottinger and W. Leinfellner. Dordrecht: Reidel.

Puppe, Clemens. 1995. Freedom of choice and rational decisions. *Social Choice and Welfare* 12:137–53.

Putnam, R., R. Leonardi, and R. Y. Nanetti. 1993. *Making democracy work: Civic traditions in modern Italy.* Princeton, NJ: Princeton University Press.

Rawls, J. 1971. *A theory of justice.* Cambridge, MA: Harvard University Press.

Robbins, L. 1938. Interpersonal comparisons of utility: A comment. *Economic Journal* 48:635–41.

Runciman, W. G. 1966. *Relative deprivation and social justice.* London: Routledge.

Samuelson, P. A. 1947. *Foundations of economic analysis.* Cambridge, MA: Harvard University Press.

Sen, A. K. 1970a. *Collective choice and social welfare.* San Francisco: Holden-Day. Republished Amsterdam: North-Holland, 1979.

Sen, A. K. 1970b. Interpersonal aggregation and partial comparability. *Econometrica* 38:393–409.

Sen, A. K. 1973. *On economic inequality.* Oxford, UK: Clarendon Press.

Sen, A. K. 1976. Real national income. *Review of Economic Studies* 43:19–39.

Sen, A. K. 1979. The welfare basis of real income comparisons: A survey. *Journal of Economic Literature* 17:1–45.

Sen, A. K. 1980. Equality of what? In *Tanner lectures on human values,* edited by S. McMurrin. Cambridge, UK: Cambridge University Press.

Sen, A. K. 1981. Public action and the quality of life in developing countries. *Oxford Bulletin of Economics and Statistics* 43:287–319.

Sen, A. K. 1982. *Choice, welfare and measurement.* Oxford: Blackwell and Cambridge, MA: MIT Press.

Sen, A. K. 1984. *Resources, values and development,* Oxford: Blackwell and Cambridge, MA: Harvard University Press.

Sen, A. K. 1985a. *Commodities and capabilities.* Amsterdam: North-Holland.

Sen, A. K. 1985b. Well-being, agency and freedom: The Dewey lectures 1984. *Journal of Philosophy* 82:169–221.

Sen, A. K. 1987. *The standard of living,* edited by G. Hawthorn, and with comments from K. Hart, R. Kanbur, J. Muellbauer, and B. Williams.

Sen, A. K. 1990. Gender and cooperative conflict. In *Persistent inequalities,* edited by Irene Tinker. New York: Oxford University Press.

Sen, A. K. 1991a. Welfare, preference and freedom. *Journal of Econometrics* 50:15–29.

Sen, A. K. 1991b. On indexing primary goods and capabilities. Unpublished paper, Harvard University, Cambridge, MA.

Sen, A. K. 1992. *Inequality reexamined.* Oxford: Oxford University Press and Cambridge, MA: Harvard University Press.

Sen, A. K. 1993. The economics of life and death. *Scientific American* 268(May):40–7.

Sen, A. K. 1995a. Demography and welfare economics. *Empirica* 22:1–21.

Sen, A. K. 1995b. Rationality and social choice. *American Economic Review* 85:1–24.

Sen, A. K. 1997. Inequality, unemployment and contemporary Europe. Paper presented at the Calouste Gulbenkian Conference on A Joint Europe May 1997. *International Labour Review.* In press.

Sen, A. K. 1998. Mortality as an indicator of economic success or failure. (Text of the first Innocenti Lecture, UNICEF, Florence, 1995.) *Economic Journal.* In press.

Shorrocks, A. F. 1995. Inequality and welfare comparisons for heterogeneous populations. Unpublished paper, Department of Economics, University of Essex, UK.

Smith, A. 1776. *An inquiry into the nature and causes of the wealth of nations,* edited by R. H. Campbell and A. S. Skinner. Oxford: Clarendon Press.

Suppes, P. 1987. Maximizing freedom of decision: An axiomatic analysis. In *Arrow and the foundations of economic policy,* edited by G. R. Feiwel. London: Macmillan.

Townsend, P. 1979. *Poverty in the United Kingdom.* London: Penguin Books.

UNDP. 1990. *Human development report.* New York: Oxford University Press.

UNDP. 1995. *Human development report.* New York: Oxford University Press.

UNDP. 1997. *Human development report.* New York: Oxford University Press.

U.S. Department of Health and Human Services. 1996. *Health, United States 1995.* Hyattsville, MD: U.S. Department of Health and Human Services.

WHO. 1994. *World health statistics annual 1994.* Geneva: World Health Organization.

World Bank. 1996. *World development report.* New York: Oxford University Press.