The Frank E. Seidman Distinguished Award In Political Economy

Acceptance Paper By

AMARTYA SEN

Welfare Economics and The Real World

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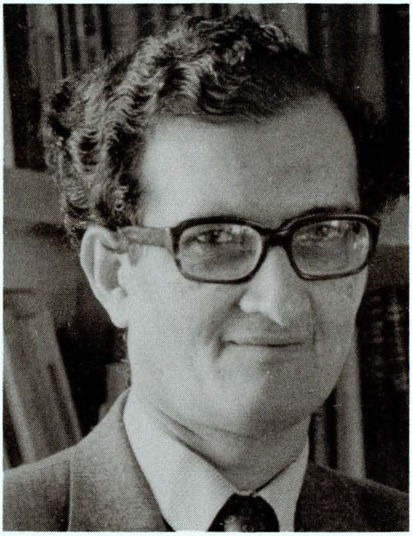

AMARTYA SEN
RECIPIENT OF THIRTEENTH ANNUAL FRANK E. SEIDMAN DISTINGUISHED AWARD in POLITICAL ECONOMY

Memphis, Tennessee, September 18, 1986

Dr. Amartya Sen, Drummond Professor of Political Economy at Oxford University, is the recipient of the 13th annual Frank E. Seidman Distinguished Award in Political Economy from Rhodes College.

Dr. Sen, a native of Santiniketan, Bengal, India, is a Fellow of All-Souls College, Oxford; an Honorary Fellow of the London School of Economics, and of the Institute of Social Studies, The Hague; and an Honorary Professor of Delhi University in India.

The author of numerous books and articles, Dr. Sen is known for his contributions to various areas of the economics field including welfare economics, economic measurement, analytic foundations of rational choice, behavioral bases of economic theory, technology in developing countries, and his theory of the causes of famine.

Dr. Sen is noted for his work in welfare economics and social choice theory. One of his aims is expanding the informational bases of the two areas, incorporating considerations of liberty and rights, and exploring problems of individual and collective rationality of different societies.

His contributions to methods and techniques of economic measurement, particularly of real national income; standards of living; poverty; economic inequality; and unemployment are widely known, as are his studies of appropriate technologies developing countries should choose to employ.

Dr. Sen has worked on developing a theory of the causes of famine particularly in Asia and Africa, focusing on the various reasons for starvation rather than just on food supply itself.

The teacher, lecturer and author received a B.A. degree from Presidency College in Calcutta and another at Trinity College, Cambridge, where he also earned his M.A. and Ph.D. degrees. He holds four honorary degrees, one each from Bath and Essex Universities in the United Kingdom; the University of Saskatchewan, Canada; and Visva-Bharati University, India. Dr. Sen has taught at Cambridge University and the London School of Economics. In the United States he has taught at M.I.T., Stanford University, the University of California at Berkeley, Harvard and Cornell Universities.

The recipient of numerous professional awards, Dr. Sen has served as chair of the United Nations Expert Group on the Role of Advanced Skill and Technology and as President of the Development Studies Association. In 1984 he was President of the Econometric Society, a well-known international organization of mathematical economists and statisticians. Dr. Sen is a Fellow of the British Academy, a Foreign Honorary Member of the American Academy of Arts and Sciences, and an Honorary Member of the American Economic Association.

WELFARE ECONOMICS AND THE REAL WORLD

by

Amartya Sen

The emergence of welfare economics as a separate field of study is a comparatively recent phenomenon. The publication of A. C. Pigou's Wealth and Welfare in 1912 may well be seen as the event that marked the birth of the new subject. However, the subject appeared to be all finished and dead not long after its birth. Lionel Robbins's positivist critique, published in 1932, dealt a severe blow to the recently emerging normative discipline by raising some questions that seemed devastating. This was followed by a period of uncertain solutions and very certain demonstrations of the unviability of these solutions. The compensations tests came and went. So did the so-called "new welfare economics". Further, some apparently weak demands for using a social welfare function were met with a powerful demonstration of impossibility (Arrow 1951a). By the fifties the ailing subject was inspiring grief and even nostalgia, and it produced, as William Baumol (1965) describes, "a number of statements about the significance of welfare economics which bore an ill-concealed resemblance to obituary notices" (p. 2). The young subject seemed effectively dead, and while it may be the case that "whom the gods love die young", no *other* evidence of the love of the gods for welfare economics was visible.

But, *then,* the subject revived. Utilitarian welfare economics was back, but contributions in this tradition were soon vastly outnumbered by other writings emphasizing income distribution and equity, fairness and justice, liberty and rights, and inequality and poverty. Traditional welfare economic analyses (including normative public finance) became the large subject that Pigou had hoped it might become. But the new discipline of social choice theory grew even faster, filling the world of welfare economics with possibility and impossibility results, characterisation theorems, implementation rules, axiomatic derivations of normative measures, and so forth. By the end of the seventies, editors of various journals of economics (including Econometrica, Journal of Economic Theory, and Review of Economic Studies) were inserting notes in their respective journals to the effect that they were receiving too many good articles in social choice theory for publication, and announced that they would, in the future, be especially hard in assessing contributions in this field. The obituary notices of the fifties were clearly rather premature, and the report of the death of welfare economics may have been, as Mark Twain had said in a personal context, "an exaggeration".

In trying to understand what has been happening, it is useful to concentrate on the issues raised rather than trying to amass together a blow-by-blow account of the events. Given the nature and enormity of the "fall" in the thirties through the fifties, it would be absurd to imagine that there was nothing of substance in the killing of welfare economics. What were these doubts and questions, and how are they being answered? Also, what are the new questions that have emerged? Finally, where do we go from here? We cannot begin to assess the *state* of welfare economics as it is emerging without addressing these issues from our own perspectives.

Utility and Paretian welfare economics

The approach to welfare economics that can legitimately be called "traditional" is undoubtedly that of utilitarianism. The formulations on which Pigou (1920) relied in developing his "economics of welfare" drew on the earlier utilitarian works of Bentham, Mill, Edgeworth, Sidgwick, Marshall, and others. States were to be assessed by the sum-total of individual utilities in the respective states, and all choice variables — actions, rules, institutions, etc. — were to be judged by examining their utility consequences.

The utilitarian approach relies on three distinct elements, to wit: (1) *welfarism*, the goodness of a state is a function of the individual utilities in that state; (2) *sum-ranking*, that function must take the form of simply summing the utilities; and (3) *consequentialism*, all control variables (such as actions, rules, etc.) are to be judged by the goodness of the consequent states. These distinct elements have rather different effects on welfare economics, but since they were not clearly separated in the traditional literature, their exact roles were not critically examined in the controversies that led to the "fall" of utilitarian welfare economics in the thirties and forties.

Indeed, the chief attacks on utilitarian welfare economics did not at all take the form of disputing the normative relevance of any of the three components of utilitarianism. Robbins's (1932, 1938) influential criticisms centered almost exclusively on informational availability, and he argued that interpersonal comparison of utilities could not be factually made. The *adequacy* of utility information—if available—for judgements of social welfare was not disputed; only the factual *availability* of that information was denied.

In terms of the three components, the absence of interpersonally comparable utility information would rule out sum-ranking in particular. This led naturally to insisting only on welfarism and consequentialism, *without* sum-ranking. Given the acceptance of utility data only in the form of ordinal and non-comparable utilities, the only rule that seemed easily applicable was one of vector-dominance. This was the Pareto principle, declaring state x to be better than state y if everyone has at least as much utility in x as in y and someone has more in x than in y. If a state has no Pareto-superior rival among the feasible alternatives, then that state is Pareto optimal. The combination of this incomplete criterion of Pareto optimality with welfarism and consequentialism led to the emergence of Paretian welfare economics.

The central result in this tradition is the so-called "fundamental theorem of welfare economics" (established by Arrow (1951b) and Debreu (1959), building on earlier works by Hicks (1939), Lange (1942), Lerner (1944) and Samuelson (1947), among others), showing a two-way congruence between competitive equilibria and Pareto optimal states (given some structural assumption, such as the absence of externalities and of increasing returns to scale). It is undoubtedly an important result, and deeply illuminating about what the market mechanism may or may not be able to achieve (see Arrow and Hahn, 1971).

But the reach of the result does also turn on the welfare significance of the criterion of Pareto optimality. Pareto optimality is, in fact, an extremely weak demand so long as we accept welfarism and take utilities to be the only objects of value. Even a society with a plethora of extremely miserable people will be Pareto optimal if their misery cannot be reduced without cutting into the affluence of the luckier and happier individuals. A Pareto-optimal state can, quite possibly, be a den of inequity and wretchedness. If that condition is to be treated as *sufficient* for over-all optimality, then welfare economics must be seen to be oddly insensitive.

In fact, Pareto optimality is typically taken to be *necessary but not sufficient* for over-all optimality. This lends special importance to one part of the so-called fundamental theorem, viz., that all Pareto optima are competitive equilibria. Even the very best, which also must be a Pareto optimal state (given the *necessity* of Pareto optimality), can be achieved through a competitive equilibrium (by virtue of the theorem).

The practical import of the result calls for some examination. There are informational and logistic problems in deciding on how to arrive at the initial distribution of resources that would yield the *right* Pareto optimal state among the vast class of such states. But quite aside from these problems, there is also the immediate issue—particularly relevant in the present context—that we need some welfare criteria that would go beyond Pareto optimality so that we can choose *among* different Pareto optimal states. What are these additional welfare criteria? This is a question that brings us back to the main normative problem underlying welfare economics.

The limitation of Pareto optimality as a sufficient condition had been recognized early enough, and this had led to suggestions of alternative approaches for going beyond it. Since utilitarianism and sum-ranking were not usable, given the accepted denial of interpersonal comparability of utility, the search had to be continued in different directions. I shall presently comment on these searches, but before that I should emphasize that all these developments are based on the acceptance of the *necessity* (though not the sufficiency) of Pareto optimality.

In fact, no great efforts were spent in the welfare-economic literature until fairly recently in examining whether it is adequate for welfare economics to accept utility as the only object of value. In the recent literature, especially in social choice theory, other objects have been considered as possibly intrinsically important, such as liberty, rights, freedom (see Sen, 1970, 1982, Pattanaik, 1971, Kelly, 1978, Pattanaik and Salles, 1983, Suzumura, 1983, Wriglesworth, 1985). If these things are seen as intrinsically important (and not just instrumentally relevant for achieving more utility), then welfarism has to go, and so does Pareto optimality even as a necessary condition of over-all optimality.

Compensation, consistency and information

One way of going beyond the Pareto principle in making social welfare judgments involved the so-called compensation tests. The basic idea here is to compare two Pareto-incomparable alternatives by considering the possibility of the gainers compensating the losers in the move from one state to the other. If those who gain in moving from x to y can compensate those who lose and still retain some gain, then y—in this approach—can be seen as superior to x. The procedure, first proposed by Nicholas Kaldor (1939), was riddled with logical problems of reach and consistency, which were explored by Hicks, Scitovsky, Samuelson, Little, Graaff, Baumol, Gorman, and others.

It is, however, arguable that the real problem is not one of making compensation tests consistent—this can indeed be achieved by making the demands more exacting—but the motivation underlying it. It is arguable that the entire approach is *either* unconvincing *or* redundant. Consider a move from x to y in which the poor get a lot poorer, but the rich gain so much that they *can* compensate the poor and still retain some gain. If compensations are not actually paid, then it is not obvious why this should be seen as an improvement. ("You see, the millionaires have gained so much that they could easily compensate the poor for their loss, but—good God—there are no plans of making that happen!").

This unconvincing criterion can be, of course, made more convincing by actually paying the compensations and not merely using it as a hypothetical possibility. Then it would indeed be true that no one has lost anything because of the change (thanks to compensation), and some have actually gained. The over-all change could, then, plausibly be seen as an improvement. This is convincing enough, but that is only because the change *along with the compensation* is simply a Pareto improvement. To endorse that, we need no compensation criterion, but simply a recollection of the old Pareto principle. The approach can be made more convincing only by making it entirely redundant.

There is, in fact, something of methodological interest in the way compensation tests had seemed initially to be plausible, and this has much to do with the illustrations that were used to show the application of these tests. Kaldor (1939) had taken the case of the abolition of the Corn Laws in Britain in the 1840s, which had resulted—as is widely acknowledged—in gains for the common people and for the industrialists, and losses for the landlords. It is not, of course, unplausible to think that this was indeed a good thing for Britain, since the landlords are fewer and richer anyway (and furthermore, the legitimacy of returns on land ownership is often disputed). If that distributional judgement (either on grounds of relative needs, or on that of lack of legitimacy) was the thing that made the support for the abolition of the Corn Laws plausible, then the fact that the change also would have satisfied the Kaldor compensation test is neither here nor there.

Indeed, had the abolition of the Corn Laws made the common people clearly worse off, but the landlords and industrialists so much richer that they could have compensated the common people, then to argue in favour of that change even without the compensations being actually paid would have lacked plausibility. But it would have satisfied the Kaldor compensation criterion just as much as the other case. It is the *implicit* use of *other* information—not an integral part of the compensation test—that is significant here. If there is a lesson to be drawn from all this, it is the relevance of various types of information for making welfare economic judgements, despite attempts by formal welfare criteria to ignore such information. I shall come back to this question of informational adequacy again later on, in discussing modern debates (dealing with matters quite different from those that the compensation tests addressed).

Social welfare functions and impossibility

A different line of extending the Paretian approach involved the use of the notion of a social welfare function, first developed by Abram Bergson (1938) and then extensively explored by Paul Samuelson (1947). A social welfare function can be seen as a systematic and consistent way of assigning values to alternative social states. Such a function can be required to satisfy the Pareto principle, by treating Pareto optimality as a necessary but not a sufficient condition for over-all optimality, and it can go beyond Pareto optimality if other requirements consistent with it are also imposed. Unlike the compensation approach, the Bergson-Samuelson line of investigation explicitly and plausibly addressed the issue of what is valuable and how that might be reflected in the evaluation of different social states.

It was, however, soon to be demonstrated by Kenneth Arrow (1951a) that making such a social welfare function depend on individual utility orderings (ordinal and non-comparable individual utility functions) and demanding that the relationship should satisfy certain elementary and commonly articulated background requirements would generate an impossibility. If there are at least three states and a finite set of people, then there is an internal inconsistency among the requirements of "unrestricted domain" (any set of individual orderings should be admissible), "independence" (the social ranking of any pair of states must depend only on individual rankings of that pair), the "weak Pareto principle" (unanimous strict preference must be reflected in the corresponding strict ranking), and "non-dictatorship" (there must not be anyone all of whose strict preferences are invariably reflected in corresponding social rankings). This classic "impossibility theorem" was seen as one of the chief grounds for the "obituary notices" served in the fifties. What had seemed to be a most fruitful way of taking welfare economics beyond the inarticulate incompleteness of the Paretian approach appeared to have come to nought.

Impossibility and information

In the social choice literature that followed Arrow's pioneering contribution, various ways of avoiding the impossibility result have been extensively explored (see among others Sen, 1970, Pattanaik, 1971, Fishburn, 1973, Hansson, 1976, Plott, 1976, Kelly, 1978, Suzumura, 1983, Pattanaik and Salles, 1983, Schwartz, 1986). I shall not try to address them all here, and will confine my attention to the informational question raised earlier. The effect of the union of Arrow's various conditions is to rule out any essential use of non-utility information and to permit the use of utility information only in the very limited form of ordinal, non-comparable utilities. Arrow's theorem can be generalized to cover cases of *cardinal* utilities as well (see Sen, 1970), so that ordinality is not crucial to the impossibility result, but the absence of interpersonal comparability *is*, and so is the neglect of non-utility information. It can be argued that the impossibility result arises largely from this informational lacuna.

If utility information is usable in a richer form, in particular involving interpersonal comparability (see Suppes, 1966, Sen, 1970), then many rules of social welfare judgements could satisfy all of Arrow's conditions. A variant of the Rawlsian (1971) "Difference Principle", which concentrates on the utility level of the worst-off person, is an example. So is the utilitarian rule and its variants (see Mirrlees, 1971, Atkinson, 1983, Jorgenson and Slesnick, 1984, Riley, 1986). These rules can be axiomatically derived in a richer utility space (see Harsanyi, 1955, Hammond, 1976, d'Aspremont and Gevers, 1977, Arrow, 1977, Roberts, 1980, Suzumura, 1983, Blackorby, Donaldson and Weymark, 1984, among other contributions). Indeed, all the Arrow conditions are quite standard for the utilitarian approach, and the difference between possibility and impossibility arises from the fact that interpersonal comparability of utility, powerfully used in the utilitarian calculus, is not usable in the Arrow framework. That is where the original Robbinsian critique did bite.

An alternative way of informational enrichment would have taken the form of admitting the use of non-utility information in judging states of affairs. People's advantages can be judged by various criteria other than utilities, e.g., their real incomes, their access to various "primary goods" needed for the pursuit of their goals, their "entitlements" to various commodity bundles, or their "capability" to achieve valuable functionings (see Fisher, 1956, Little, 1957, Musgrave, 1959, Sen, 1970, 1985b, Rawls, 1971, Archibald and Donaldson 1979, Deaton and Muellbauer, 1980, Atkinson and Stiglitz, 1980, Dasgupta, 1982, Atkinson, 1983, Roemer, 1985, Kelsey, 1987, among others). Even if it is accepted that interpersonal comparisons of utility cannot be used, these variables may be made to yield interpersonally comparable measures of advantage, and social welfare judgements can be made to depend on them without running into Arrow's impossibility result (see Sen 1977, 1982).

The developments of the social choice literature have led to the exploration of a great many of these possibilities, and they can be used both for conceptual clarity and for actual empirical use, e.g., in normative measurement theory (see Atkinson, 1983, Sen, 1976a, 1976b, 1982, 1985b, Graaff, 1977, Foster, 1984). While it is correct to say that these works depart from Arrow's own framework, it is easy to see that they are ultimately the result of Arrow's pioneering lead. The force of Arrow's impossibility result had the effect—among others—of drawing attention to the question of informational availability, since it soon became clear that the impossibility owed much to the informational famine in the traditional welfare-economic framework axiomatized by Arrow. Arrow had, in effect, stuck to the welfarist structure of traditional utilitarian economics (giving no intrinsic role to non-utility information). The conditions imposed by Arrow on social welfare functions had been implicitly used in that tradition. In that largely utilitarian structure, the elimination of interpersonal comparability of utility precipitated the impossibility result. Either the reintroduction of interpersonally comparable utility, or giving intrinsic importance to non-utility information, would eliminate that informational famine and avert the impossibility (see Sen, 1970, 1982).

Furthermore, attention being paid to the informational question enriches the welfare-economic tradition in a way that has positive implications going far beyond merely seeking escape from Arrow's impossibility result. Arrow's pioneering work played a crucial dialectic role in all this. The major cause of the "fall" was, thus, also the main influence on the subsequent "rise".

The use of different types of information for social welfare judgements is not, of course, free from problems. The difficulties of interpersonal comparisons of utility are far from trivial. However, it is arguable that some cases of interpersonal comparison are easy enough in terms of the accepted methodologies of empirical assessment. Indeed, as Donald Davidson (1986) has argued, "the basis of interpersonal comparison already exists when we attribute desires to others" and "comparisons are implicit in such attribution" (p. 210). Other cases may be hard, perhaps impossible. This suggests that the all-or-none format of debates on the admissibility of interpersonal comparisons of utility may be mistaken. Furthermore, it can be shown that *partial* interpersonal comparability can be used systematically and effectively to make social welfare judgements (see Sen, 1970, 1982, Blackorby, 1975, Fine, 1975, Basu, 1980).

Use of non-utility information of various types (such as liberties, rights, opulence, etc.) can also raise problems of measurement and consistency, but these problems can be at least partially resolved by being more deliberate and explicit about the valuation systems that we would wish to adopt (see Sen, 1970, 1982, Suzumura, 1983, Wriglesworth, 1985). Any "impossibility" that may be encountered on the way to constructing a positive approach has to be seen as an invitation to reflect and respond (including re-examining the information base), rather than as a requirement to relinquish.

Utility, entitlement and capabilities

It was discussed earlier that the Robbinsian attack on utilitarian welfare economics had concentrated its fire on the *availability* of utility information (in interpersonally comparable form), and not on its *adequacy*. In contrast, a good deal of the recent criticisms of the utilitarian approach has focused on the issue of adequacy (see Rawls, 1971, Williams, 1973, Nozick, 1974, Buchanan, 1986). Two states may be identical on the utility space, but enormously different in terms of other features (e.g., freedoms or rights). While the utilitarian approach—indeed any welfarist procedure of which utilitarianism is a special case—must regard those two states to be equally good, there may be excellent grounds for distinguishing between them in the light of their non-utility differences. (Sen, 1970, 1977).

There are, in fact, two quite distinct and essentially separate problems in adopting welfarism. First, social welfare need not be taken to be a function only of individual achievements of well-being, and such matters as the fulfilment or violation of rights, liberties, freedoms, etc., may be taken to be intrinsically important. Second, well-being of persons need not be identified with their respective utilities. The latter is perhaps a harder issue to face in formulating welfare-economic procedures. The problem arises from the fact that none of the standard characterisations of utility—in the form of happiness, pleasure-minus-pain, desire-fulfilment, or the binary relation of choice—is informationally rich enough to capture the complexity of the idea of well-being. For example, an extremely deprived person who has been battered by the deprivation may have learned to take pleasure in small mercies and may have also trained himself to cut his desires to what is realistic in his station and condition. His deprivation would, as a consequence, have been sharply diminished in the space of pleasures, happiness, desire-fulfilment, etc. But it is arguable that to regard his well-being to be correspondingly enhanced would be a mistake. The art of living includes strategies—typically implicit—on what to desire ("not the moon"), how to take pleasure ("don't grumble"), etc. But the resultant mental states are not to be seen—as utilitarians tend to—as summary *evaluations* of our over-all well-being.

This type of consideration is particularly important in judging systematic deprivation of traditionally discriminated groups, e.g., in inequalities related to class, caste, race or gender (see Sen, 1984, 1985a, 1985b). The precarious landless labourer, the insecure sharecropper, the exploited sweat-shop worker, the over-worked domestic servant, the ill-treated untouchable, the subdued housewife, and other such people may deal with their predicament in as good a spirit as possible and with as little complaint as can be achieved. But their deprivations in the respective societies cannot be plausibly seen as having been "compensated" by these responses, thereby giving them a much higher well-being. Issues of equity, justice, poverty and inequality call for going *beyond* the utility metric.

Resistance to making evaluative use of non-utility information come not only from committed utilitarians (and welfarists in general), but also from those worried about the availability of non-utility data. Of course, there are many problems in getting and using non-utility information of the relevant types. But that recognition cannot make us overlook the fact that getting utility information is also problematic and has been seen to be so for a long time. Indeed, as was discussed earlier, the main attack on utilitarian welfare economics in the period of the "obituary notices" had come from those, like Robbins, who had been worried about the availability of the required types of utility information. Robbins may have been wrong and interpersonally comparable utilities may not be impossible to use, but we should not make the opposite mistake of presuming that non-utility information would be typically harder to get than utility data.

In some contexts, it may be adequate to look at the information that is relatively easy to obtain and use. In practical welfare economics, dealing with such issues as elimination of poverty, hunger and famines, the information on real incomes and entitlements over commodity bundles may be effectively usable without having to estimate utility data (Sen, 1981). In taking a deeper view of poverty, calling for more sophistication, we may reasonably move from income and commodities to people's "functionings"—what they succeed in *being* or *doing*. How long do they live? Are they undernourished? Can they avoid escapable morbidity? Do they succeed in moving about freely? Can they take part in the life of the community? And so on. It is arguable that not only are these different types of information more immediately relevant in judging well-being and living standards than simple utility information would be, but also they are no more difficult to obtain than the corresponding utility information for the purpose of studying predicaments and deprivations (see Sen, 1982, 1984, 1985b, 1986).

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 (e.g., in dealing with basic needs, development indicators, etc.), they have typically been ignored in welfare-economic treatises despite their obvious importance to people's own conception of their well-being. Some of these data are systematically collected and stored by organizations concerned with health services, nutritional programmes and epidemiology, so that data availability in this area may be no more problematic—often much less so—than that for some "economic" data persistently sought by welfare economists (see Sen, 1984, 1985b). Also, the availability of actual empirical data is partly a result of *demanding* such information. If the intrinsic relevance of many of these variables is accepted by welfare economists, then there might well be more demand *and* correspondingly more supply of such information for use in applied welfare economics.

A concluding remark

The informational issue is, I have tried to argue, a dominant one in generating *or* eliminating impossibility results in welfare economics. Further, its role in expanding the reach and relevance of welfare economics is quite crucial. Many of the major policy issues across the world call for an informationally extended welfare-economic treatment. So do assessments of inequality, poverty, discrimination, sex bias, and other economic matters of social concern.

There is need for more probing welfare-economic analysis as well as for richer descriptive studies. I have tried to argue that these two needs are closely related to each other, since the poverty of welfare-economic analysis has often been related to the undue narrowness of the chosen descriptive base. The "fall" of welfare economics in the period of the "obituary notices" was not unconnected with this question. Indeed, as was discussed earlier, the impossibility results turned on the nature of the informational base. The revival of welfare economics has tended to go hand in hand with the expansion of the accepted informational base for welfare economics.

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