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## HOW FAIR IS THE NOBEL?

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# Amartya Sen, Economics Nobel Laureate 1998

Kaushik Basu

*Amartya Sen is well known for his work on worldwide poverty. The author, a former student of Sen's, reviews the breadth and importance of his work in a variety of fields.*

Some years ago, when Amartya Sen, then Lamont University Professor at Harvard University, was on a lecture tour abroad, a news article listing Sen's many achievements noted that he taught at two famous American universities, Lamont and Harvard. It must have seemed a shocking mistake to all those who knew Amartya Sen or Harvard University (I cannot tell what it seemed to those who knew Lamont University). But over the last few months, since he won the Nobel Prize in economics, reading the popular press prodigiously explaining Sen's work and why he won the Nobel Prize makes one realize that errors of this kind, while disturbing, are the least of it. The more significant mistakes are the ones made in interpreting his work.

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One source of many such mistakes is Sen himself. He has comfortably straddled two worlds, that of academic, technical economics, and that of policy and pamphleteering. Since the laity and the nonspecialized journalist have some familiarity with the latter, it has been easy for them to jump to the conclusion that it is for the latter that Sen won the Nobel Prize. A mistake of this kind could not have occurred, for instance, with Gerard Debreu, also a Nobel laureate, since journalists would not be able to read *any* of his papers.

Among the most common assertions have been that Sen was awarded the prize for showing how famines can occur during times of plenty or how famines are unlikely in a democracy, or for his work in development economics. The exception is the official Nobel citation released by the Royal Swedish Academy of Sciences, which states that Sen had been given the prize “for his contributions to welfare economics.” The accompanying text mentions a range of his work, but it gives primacy of place to Amartya Sen’s work on social choice theory, axiomatic welfare economics, and individual decision-making. This is the work that he did from the mid-1960s to the late 1970s, mostly in Delhi and London. A part of this work is reported in his classic book, *Collective Choice and Social Welfare* (San Francisco: Holden-Day, 1970), his most important book. It is a work of immense elegance, combining formal logic, welfare economics, and moral philosophy. The book put forth many new theorems (or at least reported on new theorems that Sen had first published in journals), but, more important, it has influenced the *way* one thinks of welfare economics and collective decision-making.

## Welfare and Social Choice

Amartya Sen did not start out in welfare economics. As an undergraduate student at Trinity College, Cambridge Univer-

sity (where he has now returned to be master), Sen wrote a dissertation on the choice of technology. The dissertation, with small modifications, earned him a Ph.D. and was published by Basil Blackwell in 1960. *Choice of Techniques* became a celebrated book, and was read, researched on, and modified by students of development, planning, and growth. It had many spin-offs for Sen himself. He contributed to growth theory, cost-benefit analysis, and development. He became full professor at the Delhi School of Economics in 1963, at the age of thirty, and a little thereafter he became a fellow of the Econometric Society.

During this time, however, his interests were beginning to shift as he became intrigued by the problems of welfare and the conundrums of voting and social choice, about which only a small literature was available at the time. It all began in the early 1950s with the publication of Kenneth Arrow's trailblazing "impossibility theorem," which showed that all systems of voting, existing or conceivable (for example, the majority-decision rule or the two-thirds-majority-or-status-quo rule), will violate some elementary and desirable norms of democracy. This was one of the most profound breakthroughs in economics. It did not require any hard mathematics, as so much of modern economics does, and that is precisely what made it such a challenge. There were no standard results to fall back on; the theorem had to be proved through plain reasoning, of which, in principle, everyone is capable. Yet the reasoning had to be sustained relentlessly over such a long stretch that, in practice, few could have done it.

When Arrow began working on voting theory, the subject had a negligible history. This is not to deny that it had attracted some colorful personalities. Almost two hundred years before Arrow, the Marquis de Condorcet and Jean Charles de Borda had been intrigued by a strange feature of the majority decision rule that allows it to generate cycles, so that, for *every* candidate, we can find another candidate whom the majority prefers. The prob-

lem, which later attracted the eccentric genius of Lewis Carroll (who wrote mathematics using his real name, C.L. Dodgson), is easy enough to illustrate.

Suppose three persons, 1, 2, and 3, have to choose among three presidential candidates, Adlai (A), Bush (B), and Clinton (C). Suppose 1 prefers A to B to C, 2 prefers B to C to A, and 3 prefers C to A to B. If they agree to use the majority-decision rule, it is easy to see that between A and B, A will win the election (because voters 1 and 3 would vote for A); between B and C, B will win; and between C and A, C will win, thereby yielding no clear verdict on who the winner is. Note that for each of the three candidates, we can find someone whom the majority would prefer.

Arrow's shatteringly important theorem and the problem with the majority rule established the agenda on which Amartya Sen's work on social choice was based. One set of papers that he wrote, alone and with Prasanta Pattanaik of the University of California at Riverside, specified the conditions under which the majority rule "works," that is, does not give rise to the above problem of indecision. An important direction that he explored was to place restrictions on the voters' preference. It may be argued that in most societies preferences are not quite as varied across the voter spectrum as in the above imaginary example. Sen showed that, given some natural restrictions on the variation in human preference, the paradox of majority decision-making illustrated above may be averted. Given the widespread use of the majority rule and its obvious practical importance, these papers attracted a lot of attention.

Another direction that he pursued was to introduce a new axiom into this framework, that of individual liberty, capturing the notion, which goes back to John Stuart Mill, that every individual should have some "protected sphere" over which he or she has the *right* to decide, without being constrained by what others feel. For example, whether or not person X reads *The Sa-*

*tanic Verses* could be said to belong to X's personal sphere. This work of Sen's turned out to be extremely influential, drawing the subject of rights and liberty into the domain of social choice.

Sen's book *Collective Choice and Social Welfare* played a significant role in the juxtaposition of welfare economics and moral philosophy. Like liberty, other concepts and ideas from philosophy such as fairness and justice came to be analyzed using the tools of social choice theory. Arrow had written about an alleged inscription on a grave in England:

Here lies Martin Engelbrodde.  
Ha'e mercy on my soul, Lord God,  
As I would do were I Lord God  
And thou wert Martin Engelbrodde.

This is an illustration of putting oneself in another's shoes. It is the basis of a new approach to comparing the well-being of different individuals. Economists had long acknowledged the serious difficulty of making interpersonal comparisons. How can we ever know what goes on in a person's head? Can we really say that a poor boy in the street is less happy than the wealthy tycoon in his mansion? The new method of interpersonal comparison relied on making the mental experiment of putting oneself in the shoes of each of the characters involved. Would you rather be a rich tycoon than a poor boy in the street? If you can answer this, then, even though you are still in the dark about what goes on in the heads of the boy and the tycoon, you have *some* insight into the well-being of the two individuals. This method of making interpersonal comparisons was formalized into a new approach—that of “extended sympathy”—which, through the efforts of Sen and other economists and philosophers, has helped us understand better the foundations of utilitarianism and John Rawls's moral philosophy.

With such a diverse set of ideas crowding the pages of *Collec-*

*tive Choice*, the book became a classic. It drew the attention of not only economists but also professional philosophers, and it is only right that it is the spreading influence of this book that was ultimately honored by the Nobel committee.

## Delhi and London

Much of this work was done at the Delhi School of Economics, where Amartya worked from 1963 to 1971. This was a remarkable time for the Delhi School. Jagdish Bhagwati was there, teaching and researching on trade theory and development; Sukhamoy Chakravarty had returned from MIT to be a professor there; and the eminent econometrician A.L. Nagar provided leadership to the quantitative economics group.<sup>1</sup> The Delhi School was conceived of as a multidisciplinary institute, all the more impressive when one realizes that it was run on a shoestring budget. Its economics community was matched by an outstanding collection of sociologists.

I came to know Amartya Sen when I was a student at the London School of Economics, where Sen had moved in 1971. He was already quite well known and his lectures drew full houses, with students squatting on the floor and perching on windowsills. Those were heady days, days of unbridled idealism, and his blend of economics and philosophy appealed to the students. One of the greatest economics lectures I have heard was Sen's inaugural lecture at the London School, which was published in 1973 in *Economica* as "Behavior and the Concept of Preference." It helped shape my own Ph.D. research agenda, a Ph.D. that I would later pursue with Amartya as principal adviser. In this paper Sen puzzled over the meaning of individual rationality. Was rationality simply a matter of consistency, as many economists had come to believe in light of Samuelson's famous work on revealed preference (in which a person's preference was taken



to be simply that which was revealed by her choice), or was it something else? Also, what was the relation between the various kinds of consistency axioms floating around at that time? The lecture raised more questions than it answered, but it led to a series of formal papers on rational choice theory and consistency.

## Philosophy

Throughout the time that Sen was working on the choice of technology and social choice theory, one of his enduring passions was philosophy. The roots of this passion are not difficult to fathom. His mother's father, K.M. Sen, was a philosopher of distinction who wrote on religion and Hinduism and lectured at Viswa Bharati University (founded by the literature Nobel laureate Rabindranath Tagore) in Shantiniketan, a small town outside Calcutta where Amartya was born and grew up. K.M. Sen belonged to a generation that upheld the oral tradition, and Amartya must have learned philosophy by talking and listening to him.

The first evidence of Amartya's interest in philosophy was a paper he wrote in 1959 for *Enquiry*. It is a little-known paper consisting of a compelling statement on determinism and free will, and for a long time I had the smug satisfaction of not knowing anyone other than me who had read it. Sen may have since moved away from the position he took at that time, but the paper is recommended to the reader for its lucidity, if nothing else.

Sen's philosophical interest continued to grow in Oxford as he interacted with the philosophers there. In addition to the above-mentioned journals, his papers appeared in *Philosophical Quarterly*, *Philosophy and Public Affairs*, *Theory and Decision*, and *Journal of Philosophy*. He has also lectured to philosophy students at Oxford and later at Harvard, where he offered a course jointly with Robert Nozick.



## Poverty and Campaign

During Sen's stay at the London School of Economics, his interest moved on to a subject that had always, though somewhat subliminally, been before him—poverty and inequality. Toward the end of his seven years at LSE and after he moved to Oxford as professor in 1977, Sen worked on this subject. One branch of his interest was concerned with the technical problem of how best to measure poverty. The standard method in those days was to consider an income level—the poverty line—below which a person could be called poor, and then to find the percentage of a nation's population that lived below that poverty line. This was the so-called head-count measure. Sen noted that this had an obvious restrictiveness. If you take \$10 from a person far below the poverty line and give it to someone *just* below the poverty line, the head-count measure of poverty will fall, since the recipient will cease to be below the poverty line. But, surely, in an important sense, such a transfer (from someone poor to someone better off) cannot be thought of as a poverty-reducing act. Hence, governments using the head-count measure to design policy risk crafting faulty policy.

Sen drew on his expertise in choice theory and constructed a new measure of poverty, approaching the problem by setting down the axioms of poverty that a good poverty measure should include and then deducing the measure. Sen's measure was sensitive not only to the number of persons living below the poverty line but also to how far below the line they were and to the distribution of poverty. The paper that resulted was published in *Econometrica* in 1976 and immediately caused a groundswell of interest in the subject.

The other branch of Sen's work on poverty was related to more practical concerns: what causes famines and how they can best be controlled or avoided. This resulted in *Poverty and Famines*, which is arguably his most widely read book. Beautifully writ-

ten, it was an extremely important book, full of practical policy implications and insights (some of which he pursued further in his subsequent work with Jean Dreze). Its significance, however, differs from that of his earlier work. The same book written by a less famous person probably would not have caused as much of a stir as it did. This was a case of Amartya Sen's using his already established renown to campaign for causes that he believes in, to urge state action to eradicate poverty and to lighten the burden of the weaker sections of society. And of course he was bringing an enormous amount of scholarship to bear on the subject, so that this book on famines has come to be regarded as an important work of economic history.

Working on poverty and basic needs, Sen gradually came to challenge the pervasive use of income to measure and compare human welfare. The most popular way of ranking the economic performance of countries was in terms of the per-capita incomes of the people. Sen argued repeatedly for the need to bring in other indicators of the standard of living in order to evaluate societies' overall well-being. This work has had enormous practical implications, ever since the United Nations Development Programme (UNDP), openly acknowledging Sen's influence, began computing the Human Development Index (HDI) to evaluate societies. The HDI is constructed by taking account of three aspects of each nation or society: the life expectancy of its people, the average level of literacy and education, *and* the per-capita income. But would it not be the case that a nation with a higher income would also have better health facilities and therefore higher life expectancy, and have better educational facilities and therefore higher literacy? The answer must be no, because moving away from using solely the income per capita to using the HDI makes an enormous difference in the ranking of nations. Canada, for instance, which has a lower per-capita income than the United States, Switzerland, Kuwait, Norway,

Singapore, Denmark, and Japan, turns out to have the highest HDI in the world. At the poorer end, Sri Lanka and Vietnam, for instance, move up considerably when they are assessed in terms of their HDI instead of their per-capita income alone. The shifting of attention away from income has led to evaluating policies also in terms of their impact on education and health. The *Human Development Report*, which reported the HDIs of different nations, began as a sort of alternative publication to the World Bank's immensely influential *World Development Report*. A sign of the spread of this larger concept of well-being is how close the two reports have moved to each other recently, with the World Bank placing increasing stress on the importance of *human* development.

In some newspaper articles Sen's normative work has come under attack. One mindlessly virulent example was a piece by Robert L. Pollock in the *Wall Street Journal*, October 15, 1998. Fortunately, Pollack's own partisanship is displayed early in the article, when he says that "seemingly every winner" of the Nobel Prize for literature is a Marxist. He must be positioned somewhere very outlandish for the world to appear all on one side! But one mistake that he makes, others have made. From the fact that Sen has written repeatedly about the need for public action to help the disadvantaged, some have jumped to the conclusion that Sen does not appreciate the role of the market and incentives. But that is like concluding that because Einstein wrote only about relativity, he does not believe in government intervention or, for that matter, he does believe in government intervention.

A careful reading of Sen's *oeuvre* shows that the body of policy he espouses is not very different from what would be prescribed by a large number of eminent economists, such as Kenneth Arrow, Paul Samuelson, or Joseph Stiglitz, though each of them may have concentrated on some specific policy—the one closest to his expertise.

It has been said that Sen's recent work is repetitive and populist, and there is, I believe, some truth to that charge. But it should be kept in mind that a large part of the recent work is that of a person with a cause, and this Sen II must be evaluated differently from Sen I. While the work of Sen II may not have added to the *scientific* worth of Sen I, neither does it detract from it. In addition, while it is true that the Nobel citation emphasizes his early work, the prize might have eluded him if it were not for the build-up of popular acclaim, a lot of which was a consequence of his later work.

## Note

1. In an essay on the Delhi School, Sen has recounted a story from his days there about a comical implication of the school's outstanding reputation in economic theory. The China specialist Alexander Eckstein gave a talk at the Delhi School at which Professor K.A. Naqvi of the school asked a long question. Eckstein said he could not hear him properly and asked him to repeat. Naqvi, thinking that it was his name that Eckstein could not hear, replied, "K.A. Naqvi." This breathtakingly short paraphrasing of the long question had Eckstein flummoxed, but he persisted, asking again for clarification, to which Naqvi replied that it was very easy, "First you take N, then A, then Q, then V, then I." Eckstein, his preconception of the Delhi School confirmed, decided to put the matter to rest and said that although he did not fully follow him, he would think about the "formula."

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