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WHAT DO ECONOMISTS ANALYZE AND WHY: VALUES OR FACTS?

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Social thinkers frequently remind us that people differ in their views on what constitutes personal well-being, but that even when they don't differ, they disagree over the extent to which one person's well-being can be permitted to be traded off against another's. In this paper I show, by offering an account of the development of development economics, that in professional debates on social policy, economists speak or write as though they agree on values but differ on their reading of facts. A number of ethicists have concluded from this near-exclusive interest in facts that modern economics must be an ethical desert. It is shown here that the reason research economists analyze facts rather than values is that modern economics is built on broad ethical foundations, capable of being reduced as special cases to the various ethical theories that are currently on offer. Ethics has taken a back seat in modern economics not because contemporary economists are wedded to a "value-free" enterprise, but because the ethical foundations of the subject were

An earlier version of this paper was prepared for a conference on "The Place of Value in a World of Facts" at the London School of Economics (10–11 October 2003), where my task was to present to *non*-economists the modern economist's account of the place of values in a world of social facts. In the process of writing the piece I realized that for expositional purposes it would be necessary to address a narrower group. I also discovered that modern economics has recently been much criticized by a number of ethicists for its alleged ethical barrenness. So I prepared the paper with ethicists in mind as my potential readers, in part with a view to defending the approach that economists have taken in recent decades to better understand the social world. I am most grateful to Nicholas Humphrey, not only for inviting me to speak at the conference, but also for encouraging me to write on the theme I proposed to him. For their comments on the earlier draft, I am grateful to Tony Atkinson, Tim Besley, Robert Cassen, Paul Ehrlich, Geoffrey Harcourt, Sriya Iyer, Karl-Göran Mäler, Alaknanda Patel, I. G. Patel, Robert Rowthorn, Paul Seabright, Robert Solow, T. N. Srinivasan, Stefano Zamagni and, most especially, Kenneth Arrow and the Editors.

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constructed over five decades ago and are now regarded to be a settled matter.

0. PROLOGUE

Social thinkers frequently remind us that people differ in their views on what constitutes personal well-being, but that even when they don't differ, they disagree over the extent to which one person's well-being can be permitted to be traded off against another's. They point out, for example, that some people are concerned mostly about inequalities in income and wealth, while others worry more about inequalities in the access to housing and education (broadly, "life chances"), while still others deplore inequalities in what economists call *opportunity sets* (as, for example, "human capabilities" to be and do). They say that even those who believe income and wealth are the surest determinants of personal well-being disagree over the extent to which inequalities in their distribution among people are defendable. Social thinkers tell us that political differences are to be traced to differences in people's conceptions of personal and social well-being. We are given to understand that people's *ethics* differ.[1]

But if you use this reading of matters to interpret contemporary economic debates, you would face a puzzle: *professional discussions on some of the most significant issues facing humanity today are so framed that they provoke debates over facts, not values*. The philosopher Hilary Putnam wrote a few years ago that "It is all well and good to describe hypothetical cases in which two people "agree on the facts and disagree about values," but . . . (w)hen and where did a Nazi and an anti-Nazi, a communist and a social democrat, a fundamentalist and a liberal . . . agree on the facts?" (Putnam 1993: 146). The point Putnam was making is that facts can be as subject to dispute as are values, in part because facts and values are often entangled. In this paper I make a different, but stronger claim: *in professional debates on social policy, economists speak or write as though they agree on values but differ on their reading of facts*.

The debates I have in mind are not only about contingent facts, but also about the pathways that characterize social, political, and ecological systems; what one could call "deep" facts. But they are rarely about values. It is almost as though the protagonists are embarrassed to air their values, because to do so would be to state the obvious and sound grand at the same time. I have yet to read an economic document which does not regard as given that involuntary unemployment should be reduced wherever it is extensive, or that destitution should be a thing of the past, or that it would be a tragedy if the rain forests were to disappear. But there are

[1] Within economics, among the most prominent expositions of this view include Robbins (1932), Samuelson (1947), Graaff (1962), and Joan Robinson (1964). Within political theory, see Barry (1965).

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many disagreements about the most effective ways to reduce involuntary unemployment, destitution, and the extinction rates of rain forests. And, of course, disagreements about the magnitude of involuntary unemployment in a country or region, or the extent of destitution in today's world, or the rate at which the rain forests are disappearing, are also a commonplace. Similarly, the often violent confrontations we see periodically on television over "globalization" look as though they are prompted by the question whether the process, in the form it has taken shape in recent decades, benefits most people or whether it hurts a substantial number of the poorest of the poor.[2]

It can be argued that the fact–value distinction is not as clear-cut as it has commonly been made out to be, that "facts" and "values" are entangled in such concepts as "involuntary unemployment," "destitution," and "environmental degradation."[3] It may even be that deep down, those who, say, worry about the way Humanity treats Nature and those who regard markets and politics to work well enough to protect and promote Nature *do* hold different values, but filter their perceptions of the way the world works through their distinctive ethical receptors; perhaps too, their private interests. But even if they cloak their ethical differences or private interests by arguing about facts, it is the factual character of the issues they argue about, and this is the point I am making here.[4]

The near-exclusive engagement over facts on the part of working economists has led public intellectuals to conclude that modern economics must be an ethical desert. A few years ago at an evening seminar at the British Academy, the late Sir Bernard Williams read a paper attacking economists for inferring human well-being from the choices people actually make. I don't know who had advised Williams on what economists actually write, but he was evidently unaware of a huge empirical literature on valuation (e.g., placing a value on environmental resources) that goes far beyond what he imagined it does.[5]

Such misconceptions have been fuelled by my old friend and colleague Amartya Sen, who, in a pair of books that have been much noted by

[2] For contrasting opinions on the question, see Stiglitz (2002) and pretty nearly any recent issue of the weekly magazine, *The Economist*.

[3] Putnam (2002) is a major statement of this line of thinking.

[4] Ehrlich and Ehrlich (1996) offer an illuminating account of how expert scientific findings are willfully ignored, even distorted, when they prove awkward to private interests. The authors cite contemporary debates on global warming (in particular, its anthropogenic causes) and the depletion of biological diversity as examples.

[5] See, for example, Freeman (1993). I personally found the accusation ironic, because I had published a treatise only a few years earlier, on destitution and well-being, where well-being was given a wider interpretation than one based exclusively on "revealed preference," which is what Williams was attacking. See Dasgupta (1993). I go into these matters in greater detail in Sections 2–3.

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ethicists, presented what can at best be called a caricature of modern economics (Sen 1987, 1999). Among other things, Sen (1987) wrote, "it is precisely (the) narrowing of the broad (Adam) Smithian view of human beings, in modern economics, that can be seen as one of the major deficiencies of modern economic theory. This impoverishment is closely related to the distancing of economics from ethics." Sen concluded with an observation as general as could be, one nobody could but warm to, that economics and ethics have much to learn from each other. But, in the social sciences, general conclusions that appear to be incontrovertible *and* have a warm glow about them are the most suspect. Moreover, Sen did not point out to the general reader, nor did Williams appear to appreciate, that the short-cuts social scientists resort to are influenced by the scope of the problem they happen to be studying.

Consider the following questions, which are representative of the kinds asked of economists:

(1) The traffic on a highway is heavy, causing delays. There is a proposal to enlarge the road. Should it be accepted, should highway charges be introduced instead, or should the public transport system be extended?
(2) The state in a poor country has for some decades been subsidizing the use of the country's natural-resource base. Should it continue to do so? Should the subsidies be enlarged, or should they be reduced?
(3) There are plans among international bodies to help rebuild a poor country, which has been racked by civil strife and corrupt government. What should the mix of government engagement, private enterprise, and civic involvement be?

Now, there is a clear sense in which reasoned responses to the successive questions would be more elaborate, more hesitant, requiring greater sensitivity to life's nuances. For example, it can be argued that people's preferences inferred from choices they make over the use of public and private transport, and roads and rail are a reasonable basis for a response to the first question on the list. (How else would we know what the traffic will bear?) Even if it weren't entirely reasonable, I do not believe that Aristotle, whose writings are regarded by moral philosophers as the touchstone of speculations on the ethical life, could help decide how else one should go about advising what to do. Aristotle (for that matter, Adam Smith, also) does have useful things to say on the third question, but only as a prelude. In Sections 4–5 I show that as matters stand today, substantive responses to it require a good dose of modern economics, with all its technicalities. I show also that they require in addition involvement with anthropology, ecology, demography, epidemiology, psychology, and

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the nutrition and political sciences. Ethics, on the other hand, would appear to have little to offer.

There is a reason for this. Modern economics is built on broad ethical foundations, capable of being reduced as special cases to the various ethical theories that are currently on offer. When, for example, political philosophy entered an innovative phase with the publication of Rawls' theory of justice (Rawls 1972), economists almost immediately derived the theory's implications for the allocation of resources. They could do it because the foundations of welfare economics were broad enough to permit Rawls' theory to be adopted. But since the foundations themselves were settled decades ago, research economists don't find it necessary to rehearse them over and over again. They know that to do so would be to plough diminishing returns, possibly even negative returns. So, the ethical foundations of modern economics are regarded as unspoken assumptions in research publications. Moreover, ethicists are not firm guides for choosing among ethical theories. As the social, political, and ecological pathways of significance for economists, even at their clearest, are at best translucent, modern economists spend most of their intellectual energy trying to uncover the trade-offs societies face, rather than the trade-offs that are ethically permissible. To put it another way, economists resist choosing among the ethical theories currently on offer, but work instead from the other, very general end, often searching for policy-mixes that could be shown to enhance human well-being no matter which conception of well-being is adopted. What is on offer in welfare economics is therefore frequently a menu of policies; the intellectual battle being conducted over the appropriate reading of the pathways that lead policies to eventualities.

Ethics is missing from the background in none of this. But ethicists, following Sen, would appear to imagine otherwise. (John Rawls was one remarkable exception, and a reason why he has been taken so seriously by economists.) Robbins (1932), for example, continues to be a favorite target for ridicule (Sen 1987; Putnam 2002), for allegedly having steered economists toward a "value-free" enterprise. Here is Putnam (2003: 401) on this:

> [My] approach demands that we stop attempting to quarantine ethical reflection from economics in the name of "science" . . . and return to the kind of reasoned and humane evaluation of social well-being that Adam Smith saw as an essential part of the task of an economist.

But Robbins wrote over 70 years ago, and the discipline I know to be economics has moved on since then. Putnam (2003: 396) also instructs us that "the subject of welfare economics . . . *requires* that we be able to make, and meaningfully discuss, precisely claims about "the morality" of income distribution, about 'the morality' of using or not using per capita income as our *sole* measure of welfare, about the priorities

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that *should* be assigned to education, to reducing levels of disease, to reducing the levels of malnutrition . . . " (italics in the original). And he complains that economists do not do what should be required of them. In a similar vein, the philosopher Martha Nussbaum (2003: 413) speaks of "the relatively desolate intellectual landscape of economics . . . ," before pausing to confess, "I am not an economist."

As an unreconstructed research economist, I find it hard not to take these charges personally. Here I am, having tried throughout my academic life to uncover and analyze social phenomena and to arrive at policy prescriptions – learning methods and techniques from allied disciplines in order to do so – only to be told that I am no better than an oaf in clod-hoppers, rampaging through the human condition. I am not even sure what to do with the ethicists' charges, other than to note that over a half-century ago (Bergson) Burk (1938) and Samuelson (1947) established the foundations of policy evaluation on a broad, ethical structure, and that the subject "public economics," which in its present guise is now over 30 years old, has routinely engaged in overt ethical reasoning.

But, of course, merely to refer to (Bergson) Burk (1938) and Samuelson (1947) won't do. This paper, therefore, sets itself two related tasks. First, I sketch the ethical reasoning underlying modern economics. This is done in Part I (Sections 1–3) and the transitional section (Section 4). I want to demonstrate the sense in which modern economists regard the foundations of welfare economics to be a settled matter. Secondly, in Section 4 and Part II (Section 5), I present a case study, involving five decades of discussion on the problems of economic development in poor countries. The case study is designed to illustrate the thesis of this paper, that professional debates among economists on even such ethically loaded concerns as poverty and distributive justice have been about facts, not values. To be sure, there is much in the literature on economic development that can be criticized; I offer one particular set of criticisms myself in Section 5.5. But any reasoned critique of the literature would focus on omissions of facts (e.g., the neglect of local ecology in studies of rural poverty), *not* insensitivity to values. I hope the two parts and the transitional section (Section 4), taken together, go some way toward explaining why ethics has taken a back seat in contemporary economic debates and why modern economists have been entirely justified to place it there. The ethical foundations of modern economics are so broad and strong, that the real, all-things-considered normative advances that have been made in the subject are due to an improved understanding of social and ecological facts, not to continual reflections on the meaning of poverty or distributive justice, or even of development.[6]

[6] My choice of subject for the case study has been prompted by Hilary Putnam's and Martha Nussbaum's criticisms, quoted earlier. Both sets of criticism were based on a belief that

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A more detailed plan of the paper is as follows:

Section 1 offers an account of the contemporary economist's model of human agency in a market setting and of the ways in which individual choices are related to collective behavior in the market place. I also sketch the ways in which the model has been adapted to accommodate decision making in non-market environments. Sections 2 and 3 build on the model to offer an account of the ethical foundations of modern economics. Although welfare economics is thought to be insensitive to the language of rights, I show how economists have incorporated rights into what is otherwise a goal-based, consequentialist ethical theory. I then describe the way ideas of human rights and human goods have been subsumed under an overarching notion of human well-being (Section 2).

In Section 3 a distinction is drawn between the constituents and determinants of well-being. It is noted that while ethicists are temperamentally drawn to the constituents, economists study the determinants. The nature of the aggregation exercise – from *individual* to *social* well-being – is then sketched. In Sections 3.1–3.3 I show that the concept of social well-being can be formalized in three equivalent ways. I show also that the third formulation, defined as it is on the determinants of well-being, forms the basis of social cost-benefit analysis. The concept of social well-being is then studied in the context of Kenneth J. Arrow's famous theorem concerning the general impossibility of constructing democratic voting rules (Section 3.4).

I have had to deploy a certain amount of mathematical formalism in Section 3. This was unavoidable: that there are three equivalent ways of formulating the concept of social well-being is a mathematical fact. I hasten to add though that I don't *do* mathematics in Section 3, but merely use some elementary mathematical notation to illustrate the points that need to be made.

Section 4 is transitional. It responds to a recent complaint of ethicists, that the model of human agency adopted in modern economics is inapplicable to circumstances where people face tragic choices. I study empirical evidence drawn from the world's poorest households concerning allocations of food and health-care among members differing in their gender and age, and on decisions bearing on fertility and reproductive health, to argue that the economist's theory of choice is very much applicable to behavior when people are forced to choose from among terrible courses of action.

Part II (Section 5) contains an account of the evolution of modern development economics. I show that the focus of study of poor economies has changed time and again in response to empirical directives, and that

there is an absence of ethical concern among professional economists studying economic development.

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debates over policy have typically been generated by disagreements over facts, not values. I first offer reasons why in the early years of development economics, growth in gross national product (GNP) came to be regarded as the key indicator of economic progress (Section 5.1). This is followed by a discussion of the questions that arose once GNP growth was adopted as a welfare index. They include an exploration of the possible tensions between economic growth and egalitarian distributions of income, of the arguments in favor of removing government controls over trade and domestic production, and of uncovering ways of selecting public policies that are consonant with development goals (Sections 5.2–5.3). Findings on household behavior, in particular reproductive decisions and the links between female education and fertility behavior, are interpreted next (Section 5.4). I then argue that none of these issues can be addressed satisfactorily unless a study is made of the pathways that connect village poverty in the world's poorest countries to the use of the local natural-resource base there. Both are in turn shown to be related to the prevailing system of property rights to the resource-base. This relatively recent line of inquiry into the persistence of acute poverty in the world's poorest regions, is developed in Section 5.5.

But there is a viewpoint, expressed in advocacy writings by development activists, that sees the lack of economic progress in sub-Saharan Africa and parts of the Indian sub-continent as owing in large measure to a choice of economic policies that do not take people seriously. In Sections 5.6–5.8 I argue against this viewpoint, by offering additional evidence to show that differences of opinion among economists over development polices have arisen from differences in the reading of facts, not values, and that people have always been at the center of attention in the economics of development.

The debates within development economics that are reviewed in the transitional section (Section 4) and Part II do not comprise a full list. The selection of themes here has been much influenced by my own expertise and engagements. But readers wishing to visit other debates within development economics will find that my thesis holds there too: modern economists analyze facts, not values. Part I is intended to explain why.

PART I: VALUES

1. UTILITY FUNCTIONS AND PREFERENCE ORDERINGS

Modern economics – by which I mean the style of economics taught and practiced in today's graduate schools – is not much older than the Second World War. In its earliest developments the subject was much influenced by the sharp fact–value distinction prevalent in positivist writings of the 1930s. One task facing economists at the time (at least in the English speaking world) was to elucidate the theory of consumer demand, which

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studies the dependence of the demand for goods and services in market economies on prices and incomes.

The importance of this task is almost self-evident. If you want to make economic forecasts in a market economy – say, of the effect of government tax policies on the demand for goods and services – you need to discover the functional forms of those demands. Of course, if you want also to identify desirable tax policies, you need to ask more. You need to ask, among other things, why the functional forms are what they are; more generally, you need to ask what motivates people to demand what they do and what constraints they face when they make their choices; and you need to ask at what rates any one person's demands ought to be traded off against those of others. But in order to address those questions, you have to dig deeper.

Toward that end, one strand of late-nineteenth and early-twentieth-century economics (Edgeworth 1881) was based on the idea that commodity demands are generated by utility maximizing agents, the thought being that the consumption of goods and services yields *utility* – measurable in cardinal units – and that consumers seek to maximize something like the expected value of the utility they would enjoy from consuming goods and services. Of course, interpretations of the concept of utility differed among economists, just as they did among utilitarian philosophers. Some interpreted it as "pleasure," others thought of it as "satisfaction," while yet others regarded it as something like "welfare" or "well-being." Whatever the exact interpretation, the primitive concept in this theory of demand was that of a *utility function*, which is a numerical function defined on commodity bundles.

But there was another strand of thought (Pareto 1909; Slutsky 1915) that regarded someone's utility function to be no more than a numerical representation of an underlying ordering of alternatives, on the basis of which the person does his choosing. The alternatives can be thought of as states of affair, or *social states*. When the theory is applied to demand analysis, however, the alternatives are commodity bundles. The primitive concept in this theory of demand is that of an *ordering* of commodity bundles (sometimes called a "preference ordering" of commodity bundles): Utility is a derived notion.[7] Although the theory

[7] For convenience, I define the technical terms just used in the text:

Let X be a set of alternatives (e.g., states of affair, or (more narrowly) commodity bundles). By a *partial ordering* of X we mean a binary relation R (e.g., "at least as good as") among members of X, satisfying (i) "reflexivity": for all x in X, xRx; and (ii) "transitivity": for all x, y, z in X, xRy and yRz implies xRz. A partial ordering R is an *ordering* if it satisfies (iii) "completeness": for all x, y in X, either xRy or yRx. (Note that R is a partial ordering of X if there is at least one pair of members of X that are not related to each other via R.) From R we may induce the "strict" binary relation, P (e.g., "better than"), which is defined as follows: for all x, y in X, xPy if an only if xRy and *not* yRx.

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is frequently associated with Hicks and Allen (1934) and is regarded as modern economics' first show-piece, their work was a rediscovery of Pareto (1909) and Slutsky (1915) in the English speaking world.

The theory of commodity demand was designed originally to study the consumer who appears today in elementary economics textbooks. About the only thing this person is reported to be doing is buying and selling goods in markets where the prices are given. To this consumer, a feasible social state is a commodity bundle he can afford. The theory focuses on a particular type of personal freedom, where the constraints someone faces are shaped only by market prices and the earned and unearned incomes he is able to command. Today we all know him as *Economic Man*.

Intellectuals find Economic Man impossible to take. Since they also like to think that economics continues to do little more than offer accounts of Economic Man, they find modern economics impossible to take as well. They accuse Economic Man of being deracinated, alienated, and atomized, and liken him to a "balloon tethered to nothing." They charge economists with imagining that the motivations of Economic Man reflect his "rational self-interest," and insist that they can't reflect his rational self-interest, because there is no adequate self for such a person to be. Where are his emotions, they ask; where are the tragic choices he faces from time to time; where is his sense of fellowship with others; his commitment to causes and to his own self; and what about all those activities he engages in outside the market?[8]

The creators of the theory of consumer choice had expressly set themselves a very limited goal. They took Economic Man's political, social, and family engagements as given. For example, they recognized that in every economy there are a number of *public* goods (of varying quality), such as security, the legal framework, cultural treasures, places of tranquility, public health systems, and knowledge. They assumed that decisions on the supply of public goods are reached through the political process.[9] In fact, even before the advent of modern consumer choice theory, economists

By a *numerical representation* of an ordering R we mean a real-valued function U defined on X, such that for all x, y in X, xRy if and only if $U(x) \geq U(y)$. It follows that xPy if and only if $U(x) > U(y)$.

It is obvious that if X is a finite set, every ordering defined on it has a numerical representation. In fact, any order preserving transformation of a numerical representation of a given ordering is itself a numerical representation of that same ordering. This is what economists mean when they say that U is *ordinal*. If, on the other hand, X is an infinite set, some structure (viz. "continuity") has to be imposed on an ordering if it is to possess a numerical representation. (Example: the lexicographic ordering of points on the unit square does not possess a numerical representation.)

[8] In one form or other these charges appear in Sen (1987, 1999), Nussbaum (2000, 2003), and Putnam (2002, 2003).

[9] Public goods are commodities that are (i) jointly consumable and (ii) non-excludable. Fresh air used to be a proto-typical public good. In a classic paper Samuelson (1954) showed that

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had noted that transactions can give rise to *externalities*, and that a central task of government is to curb or encourage externalities by means of taxes and subsidies (Pigou 1920; Lindahl 1958 [1928]).

The concept of externalities generalizes the notion of public goods (Arrow 1971). By an "externality," economists mean the effects that transactions have on people who have not been a party to the negotiations that led to the transactions. This linking of externalities to the legal system (in particular, to the structure of property rights) was the central insight of Coase (1960). In a pure market economy, primary education and public health measures, to take only two examples, involve externalities. If I become literate, I benefit, but so do others, because they can now communicate with me via non-oral means. Similarly, if I am immunized against an infectious disease, I benefit, but so do others, because they are no longer in danger from me. That is why there can be an under-supply of goods and services conferring positive externalities. By the same token, there can be an over-supply of goods and services inflicting negative externalities (e.g., pollution). A commodity is *private* if transactions in it involve no externalities.

One of the commodities Economic Man purchases in the market is leisure. Consumer-choice theorists imagined that Economic Man spends his leisure time not only chatting, gardening, and reading books, but also engaging in those political and social activities that help to determine the extent of taxation for financing the supply of public goods, for curbing negative externalities and encouraging positive externalities, and for redistributing income and wealth. However, in the immediate post-War years, economists did not study those other activities. No doubt markets and politics are intertwined, but as there was then no adequate "political economy" to offer guidance on what those links could be, expenditures on the production of public goods and externalities were taken to be incurred by a government bent on maximizing the social good (see Sections 3.1–3.3). Government decisions on taxation, redistribution, and the supply of public goods were taken to be a given backdrop against which individual choices in the market for private goods and externalities are made. As we confirm below, the assumptions concerning Economic Man's motivations and activities reflect sociology, not psychology.[10] There was a large *ceteris paribus* clause in the study of Economic Man.

However, modern economics admits wide-ranging interpretations of utility. A person's ordering of alternatives could reflect a lot more than just the chooser's personal preferences. It could reflect an amalgam of his preferences and purposes, his personal and social values, his beliefs about

the supply of public goods involves the now-familiar Prisoners' Dilemma and concluded that the dilemma would be resolved effectively, not by markets, but by politics.

[10] I owe this way of putting the matter to Robert Solow.

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what others are like, what actions they and Nature are likely to take, and so forth. Modern economics studies diverse collections of pluralist agents.

The shift in the notion of utility from a primitive concept to a derived notion has been complete and permanent. Moreover, a "high" or "low" value of utility, *per se*, has no meaning in the economist's account. What has meaning are utility *comparisons* – across social states and across people. Of course, if the underlying ordering possesses sufficient structure, the corresponding utility would possess a cardinal representation, and comparisons among social states could yield utility differences that are "large," or "small," or "medium" relative to one another.[11] The theory even allows for "tragic choices" (Section 4). I think economists have been ill-advised to call numerical representations of orderings utility functions: it has misled many anti-utilitarian ethicists into thinking that modern welfare economics is beyond the pale. But a research enterprise should be judged by what it accomplishes, not by its ill-chosen nomenclature.[12]

2. INSTITUTIONS AND HUMAN FLOURISHING

An alternative to the program that starts with individual orderings of social states is to ask what bodies of laws, institutions, and public policies are most likely to enable people to flourish. The tactic is to study the effect of the character of the public sphere on personal decisions – and back again – in an iterative way. I am thinking here of the kind of inquiry that was undertaken by Rawls (1972). But it didn't start with Rawls. It has been a recurring theme in modern economics.

To begin with, advances in modeling strategic behavior made it possible for economists to admit a far richer set of alternatives than the one faced by Economic Man. So, the alternatives are now a great deal more than just bundles of market commodities. They are mixtures of marketed goods, public goods, goods produced within the household, and time and resources spent on education, politics, networking, even gossiping. Moreover, a key notion in the social sciences – *commitment* – is no longer a primitive. Commitment to an undertaking can be seen as being strategic, as a way of tying one's hands, as it were, so that the undertaking is credible, not only to others, but to one's own self too. A social state can now be assumed to include the allocation of resources (who gets what, when, where, and why) and anything else deemed relevant for personal or social choice.[13] Moreover, economists recognize that the ordering of alternatives that is revealed from the choices an agent makes depends on economic

[11] Among the most general formulations are in Gorman (1968) and Koopmans (1972).

[12] Pareto (1909) had used the term *ophelimity* in lieu of utility, but it has not been adopted by economists.

[13] See, for example, Samuelson (1954), Arrow (1971, 1974), Becker (1981, 1983), Dasgupta (1993, 2004 [2001]), and Persson and Tabellini (2000) for a coverage of this range of objects.

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institutions. They recognize, for example, that the concern someone has toward the poor in the Minimal State should be expected to be different from the concern she would have in a Welfare State; the reason being that, in the Welfare State she faces additional taxation to finance redistribution; whereas, in the Minimal State, redistribution can only be achieved by means of voluntary transfers. In principle, the person should not have to worry about the poor in the Welfare State (it is the government's task to enforce redistributive measures). In contrast, she will be active on their behalf in the Minimal State. Since the choices she faces in the two societies differ greatly, she chooses differently.

2.1 Well-being: goods and rights

The primary concept in the research program that asks what bodies of laws, institutions, and public policies are most likely to enable people to flourish is an individual's *well-being*, which is to be distinguished from his utility. Unlike utility, well-being is not necessarily related to the ordering on the basis of which the person chooses. The centrality in the realization of well-being of social institutions and their role as a basis for resource allocation is clear enough: social life is an expression of a person's sense of social unity, and commodities and an absence of coercion are the means by which people can pursue their own conception of the good.[14]

Welfare economists evaluate public policies in terms of their impact on social well-being. As the conceptual move from individual to social well-being involves an aggregation exercise, welfare economics is viewed by moral philosophers as being "goal-based." Rights-based theories are frequently offered in contrast. "The distinction between rights-based and goal-based theories," writes Waldron (1984: 13), "[lies in the idea] that a requirement is rights-based if it is generated by a concern for some individual interest, goal-based if it is generated by concern for something taken to be an interest of society as a whole." Rights-based theories according to this reckoning reject aggregation, because it is held that in such an exercise the interests of the individual can get swamped by claims made on behalf of a multitude of others. "A goal," writes Dworkin (1978: 91), "is a non-individuated political aim." Goal-based theories are thought to be collectivist. Worse, they are dismissed as being technocratic, formulaic, and ultimately, "algorithmic" (O'Neill 1986).

I have never felt I understood the distinction. Rights do not go against interest. They reinforce some interests against the claims of other, less urgent or vital, interests. Moreover, rights need to be justified: they can't

[14] Rawls (1972: 424–33), in an extended discussion, calls the connection between well-being and the exercise of our capacities the Aristotelian Principle. For an application of this conceptual framework to the study of desirable institutions in poor economies, see Dasgupta (1993).

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be plucked from air. Even those that are regarded as "fundamental" have as their basis the thought that they are necessary for human flourishing. They are seen as protecting and promoting a certain class of human interests, such as agency, independence, choice, and self-determination (Scanlon 1978). And concomitant with rights are a range of responsibilities. Meanwhile, however, problems of interpretation have been compounded by the claim that fundamental rights are inviolable: "Individuals have rights, and there are things no person or group may do to them [without violating their rights]" (Nozick 1974: ix). Such rights impose rigid constraints on what people may or may not do. Social states in which Nozickian rights are violated to the slightest extent are rejected in Nozick's scheme of things. Trade-offs are not permitted. In an otherwise very different theory of justice, Rawls (1972) arrived at a lexicographically ordered hierarchy of rights.

Moral philosophers frequently say that goal-based theories permit trade-offs between different people's interests, while rights-based theories prohibit trade-offs between urgent (or vital) interests and mere desires. But there are always degrees to which interests are frustrated and the corresponding rights (if there are corresponding rights) are not met. Moreover, since inviolability means a zero rate of trade-off, we wouldn't depart from the practical spirit of inviolability (assuming that rights are inviolable), if we allowed trade-offs between rights, and between rights and other goods, such as utility, provided that the trade-off rate is very small in appropriate regions of the space of states of affairs.

Thus far, theory. Regarding applicability, it is an attractive feature of Nozick's and Rawls' theories of rights that they are within the financial reach of any society. Even the poorest society should be able to ensure that people enjoy democracy and civil liberties; and even the poorest society can in addition follow Rawls, if it desires, and choose the social state where the poorest is better off than the poorest in every other social state.[15] Unfortunately, there are rights-based theories that have been built on air. Martha Nussbaum (reported approvingly in Putnam 2003) has recently produced a list of nine "central human capabilities," *every one of which*, she insists, is "non-negotiable up to some threshold level (which, typically, will be specified over time by judicial and legislative action)."[16]

[15] Rawls (1972), however, notably restricted applications of his theory of justice to countries that are not overly poor.

[16] Nussbaum (2003: 416). Her list, as catalogued by Putnam (2003), consists of (1) Life (including freedom from premature mortality), (2) Bodily Health (including reproductive health, adequate nourishment and shelter), (3) Bodily Integrity (e.g., security against violent assault, having opportunities for sexual satisfaction and for choice in matters of reproduction), (4) Senses, Imagination, and Thought (e.g., being able to have pleasurable experiences and avoid non-beneficial pain), (5) Emotional Development (not having it blighted by fear and anxiety), (6) Practical Reason (being able to form a conception of the

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The problem is that it is all too easy to regard "central human capabilities" as being non-negotiable when one is under no obligation to estimate the resource costs required to protect and promote them. What would Nussbaum's prescription be if a country is so poor that it simply cannot afford every one of the nine central human capabilities for *all* members of society – now and in the future? When the protection and promotion of rights demand resources, there is no getting away from admitting trade-offs.[17]

2.2 Rights as instrumental goods

There are aspects of a person's good that are not only intrinsically valuable, but of instrumental value too. It is a deep fact that different people know different things, possess different skills and talents, and not all people can learn or observe the same things. These features of life offer a powerful justification for the right to individual discretion in thinking, choosing, and acting. We should take this to mean that even such rights as are regarded as being "fundamental" often possess instrumental value. Freedom of expression, including a non-docile press ("the public have a right to know"), are two examples. (They enable people to create and innovate.) The private right to certain kinds of property is another. (It can be justified on the grounds that it creates incentives to accumulate and innovate, enabling economies, and thus people, to prosper.) Democracy is still another. (There is some evidence that in poor countries democracy has helped to spur economic development; see Section 5.6.) So also is it more generally with institutions, such as the family; it has instrumental value for the individual. (The cost per person in a family declines initially with numbers in the family.) The search for the instrumental worth of institutions, activities, and goods has been a recurring feature of modern economics. As some philosophers have argued, it may be that, ultimately, even "fundamental rights and obligations" have an instrumental basis for their justification – that respecting such rights and fulfilling their obligations enable people to flourish.[18]

good life), (7) Affiliation (e.g., freedom of assembly), (8) Other species (being able to live with concern for and in relation to the world of nature), and (9) Control over one's material and political environment.

[17] To confirm why trade-offs cannot be avoided, see UNDP (2003), which attempts to cost the Millennium Development Goals for the world's poorest countries. The goals include not only aggregate poverty reduction and the availability of potable water, but also reductions in the incidence of malaria, tuberculosis, and HIV-AIDS.

[18] In Dasgupta (1980, 1982a) I have tried to base the instrumental worth of human rights on the economics of incomplete and asymmetric information.

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3. PERSONAL AND SOCIAL WELL-BEING

In measuring well-being, be it that of a person or of a collectivity of persons, one may study either well-being's constituents or its determinants. In practice, a mixture of constituents and determinants are used, as for example, in the United Nations Development Program's composite Human Development Index (HDI).[19] But it pays to study them separately, which is what we do below.

3.1 Direct measures 1: Constituents

A person's well-being is composed of a variety of objects (health and satisfaction at work are but two). They are the *constituents* of well-being. As well-being itself is an aggregate, measuring someone's well-being involves an aggregation exercise; which means acknowledging trade-offs among the constituents, which in turn means that there are implied weights awarded to the constituents.

Say a person values her health, but also values a creative life that (in her case) involves a certain neglect of her health. Improvements in her health and enrichment of her creative life involve a trade-off. In order to evaluate her personal good she could use her health as the benchmark and reflect on what weight she should rationally place on her creative life. Alternatively, she could use her creative life as the benchmark and reflect on what weight she should rationally award her health. Unless the person suffers from reasoning defects, it should not matter which way she evaluates her alternatives: she will reach the same conclusion.[20] It should not be supposed, however, that the weights she rationally places on these two constituents are fixed. If her health were bad, she would place a higher weight – at the margin – on her health relative to her creative life, than if her health were good, other things being equal.

A small amount of formalism will help. Consider an N-person society. People are denoted variously by i, j, and k ($i, j, k = 1, 2, \ldots, N$). They are not necessarily to be thought of as contemporaries, since the set $\{1, 2, \ldots, N\}$ could include future people. Let x be a social state and $V_i(x)$ individual i's well-being in x. $V_i(x)$ is a scalar function. As it is an aggregate of the

[19] HDI is a suitably normalized linear combination of gross national product per head, life expectancy at birth, and literacy. See Section 5.

[20] Tversky and Kahneman (1986) found experimental evidence that the way a decision problem is framed can matter to the decision maker even when the alternative ways of framing the problem are logically equivalent. It should not be overly difficult to offer an explanation for framing effects in terms of selection advantages: words can be, and often are, used as purely signaling devices. However, if the person in the example I am considering in the text suffered from such framing defects, she could enhance her well-being indefinitely by merely switching her benchmark back and forth even while remaining at the same social state. Psychologists would be justified in calling her deluded.

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constituents of i's well-being, the units in which $V_i(x)$ is measured could be any one of the constituents of her well-being. For example, it could be health (measured in terms of, say, her nutritional status).

Those personal characteristics that are ethically relevant are embodied in the V_i functions. *Ceteris paribus*, the well-being function of an infant differs from that of an adult male, that of an adult male differs from that of a lactating mother, and so on. The point is that, if nothing else, their nutritional, health-care, and emotional needs differ. The subscript under person i's well-being function captures such differences. When nutritionists and applied econometricians refer to "adult-equivalent" scales for food or income needs in a household, it is to this they allude. For empirical purposes, they use deflators and magnifiers to construct the well-being functions of various categories of people from a representative adult's well-being function.[21]

Policy evaluation involves well-being comparisons. Imagine that individual k is the evaluator. His evaluation of person i's well-being is unlikely to be the same as someone else's evaluation of i's well-being. This isn't to claim that well-being is an entirely subjective matter (although aspects of it surely are). But if nothing else, there are always differences in the way any two people measure the same object. Let $V_{ki}(x)$ denote k's evaluation of i's well-being in social state x. Suppose now that, in k's evaluation, individual i's well-being is predicted to be higher if policy A, rather than policy B, were chosen, but that the reverse is predicted for individual j. How should k rank the policies?

It may be assumed that k has a theory of how policies lead to outcomes. Here we are to interpret outcomes as social states. So, if k believes that A will result in social state x and B in social state y, his role as a policy evaluator would be to compare x and y.

Social well-being is an aggregate of individual well-beings. Imagine that certain types of interpersonal comparisons of individual well-beings are possible (e.g., that person i is healthier than person j). The idea is to conceive social well-being from the ground up. Like individual well-being functions, social well-being is a scalar. The units in which social well-being is measured could be someone's well-being, which, as we observed earlier, would be measured in terms of one of the constituents of that person's well-being. To give an example, it could be that social well-being is measured in terms of an index of person i's health (e.g., her nutritional status).

Let us write k's evaluation of social well-being in x as $W_k(x)$,

$$(1) \qquad W_k(x) = W_k(V_{k1}(x), V_{k2}(x), \ldots, V_{kN}(x)).$$

[21] Equivalently, they could conduct the exercise by using an "infant-equivalent scale"; and so on, for any other category of persons.

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where k would judge x to be socially more desirable than y if and only if $W_k(x) > W_k(y)$. W_k is k's *social well-being function*. It embodies ethical values, not only through each of the V_{ki} functions, but also through W_k's functional form.

Suppose $W_k(x) > W_k(y)$. Since k believes that policy A leads to x and policy B leads to y, he would recommend A over B. This mode of reasoning is called *social cost-benefit analysis*.

A relatively weak ethical principle, much used in modern economics, is that W_k satisfies the criterion of *efficiency*: if x and y are identical in all respects other than that at least one of the constituents of someone's well-being is greater in x than in y, then $W_k(x) > W_k(y)$.[22]

W_k is often taken to be additive in its components:

$$\text{(1a)} \quad W_k(x) = V_{k1}(x) + V_{k2}(x) + \cdots + V_{kN}(x).$$

Note that (1a) satisfies the criterion for efficiency.

Koopmans (1972) and Maskin (1978) provided axiomatic foundations for (1a); one of their axioms identified the extent to which, for each k, the V_{ki}s ($i = 1,2,\ldots, N$) are comparable. Experience shows that there are enormous computational advantages in adopting (1a): the fundamental papers by Ramsey (1928) and Koopmans (1965) on optimum saving and Mirrlees (1971) on optimum income taxation are among the most prominent examples.

A much used alternative is the Rawlsian form:

$$\text{(1b)} \quad W_k(x) = \text{(lexicographic)-min } \{V_{k1}(x), V_{k2}(x), \ldots, V_{kN}(x)\}.$$

Note that (1b) also satisfies the criterion for efficiency.

Hammond (1976) and d'Aspremont and Gevers (1977) provided axiomatic foundations for the (lexicographic)-min form (1b); one of their axioms identified the extent to which, for each k, the V_{ki}s ($i = 1,2,\ldots, N$) are comparable. Atkinson (1973) used (1b) to estimate optimum income taxation in a simple version of the model pioneered by Mirrlees (1971) and, making a not implausible set of assumptions regarding individual motivation, showed that taxation would not be significantly more progressive if (1b) were adopted than if (1a) were adopted. This is an unexpected result, and therefore informative. (I shall offer an explanation for the finding in Section 5.) It also has a wider message: given the way the world probably is, it can be that even apparently radically different ethical theories arrive at similar policy conclusions.

[22] Efficiency, as defined above, is to be contrasted from the well-known concept of *Pareto efficiency*. The latter is efficiency on the sub-space of utilities. See below.

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3.2 Direct measures 2: Utility and other goods

In fact economists haven't usually adopted expression (1) to formulate the concept of social well-being. They have devised a different, but equivalent, method.

Imagine that evaluator k knows the ordering on the basis of which i would do her choosing. Let $U_{ki}(x)$ be the numerical function k constructs from i's ordering: it is k's construction of i's utility function. Theoretical economists typically define social well-being on individual utilities, not on individual well-beings (Samuelson 1947; Graaff 1962). In a classic treatise on public finance, however, Musgrave (1959) argued that basing social well-being exclusively on individual utilities is an improper restriction because of the presence of what he called *merit goods*. Such goods are worth more than what they contribute to utility. As we noted in the previous section, many regard individual and group "rights" to constitute a class of merit goods. Some even regard the distribution of wealth to be a merit good. Musgrave argued that when we evaluate social states, the supply of merit goods ought to be valued over and beyond the contribution they make to individual utilities. This reasoning has been pervasive in applied welfare and development economics.

Well-being is not the same as utility. The two are different because people not infrequently choose for reasons that have little to do with their own well-being. As we noted earlier, the context can matter. It could be that a person is socially obliged to choose in certain ways, or it could be that she is led to value things not in her own interest. More generally, many choices are made within the context of the household. Such choices can be a reflection of the household's internal dynamics (for example, the balance of power and responsibility among its members). In a series of books and articles that are dismissive of much modern economics, Amartya Sen has argued that individual utilities cannot be accepted as the only basis for social evaluation, because, among other things, "deprived people tend to come to terms with their deprivation" (Sen 1999: 63). But in reiterating this over the years, he has been pushing against an open door. I know of no economist who has argued, for example, that there is little need to invest in women's reproductive health programs in the poorest countries because poor women there are resigned to their fate and don't appear much to insist on them; or that governments in poor countries ought not to invest in primary education in rural areas because parents there do not care for education, and the children, being unaware of education, do not care either. Nor do I know of any modern economist who has sought justification for democracy and civil liberties from the intensity of the desires that citizens have for democracy and civil liberties. Economists have certainly asked whether poor countries can *afford* democracy and civil liberties, as have political leaders (see Section 5.6). But that question has to do with the

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possibility that democracy and civil liberties hinder growth in incomes in poor countries, something that citizens there would be expected to care about, and would be justified in doing so.

Following the leads of (Berkson) Burk (1938) and Musgrave (1959), economists regard social well-being to be a function, not only of individual utilities, but also of those characteristics of social states that are of additional ethical relevance (e.g., democracy and civil liberties) and are not merely features of social states that enter into individual orderings. Formally, this amounts to evaluator k defining social well-being to be a function H_k, that is defined on social states, with the property that, for all social states, x,

$$H_k(x) = H_k(U_{k1}(x), U_{k2}(x), \ldots, U_{kN}(x), G_{k1}(x), G_{k2}(x), \ldots, G_{kN}(x))$$

$$= W_k(V_{k1}(x), V_{k2}(x), \ldots, V_{kN}(x)), \tag{2}$$

where $\{G_{k1}(x), G_{k2}(x), \ldots, G_{kN}(x)\}$ are N functions of x, reflecting the non-utilitarian *merits* of x.

Notice that H_k is a function of x not only through the U_{ki}s, but also through the G_{ki}s. Notice too that there is no unique H_k satisfying equation (2), which is another reason why k and j may arrive at different social well-being functions. As H_k is anchored to W_k in equation (2), the $G_k$is are defined in such a way that H_k satisfies the criterion of *efficiency*: If x and y are identical in all respects other than that one or more of the arguments of H_k is greater in x than in y, then $H_k(x) > H_k(y)$.

We turn now to the familiar, but more restricted, concept of *Pareto efficiency*. We say that a feasible social state y is *Pareto inefficient* if there is a feasible social state x such that $U_{ki}(x) \geq U_{ki}(y)$ for all i and $U_{ki}(x) > U_{ki}(y)$ for at least one i. And we say that a feasible social state, say z, is *Pareto efficient* if it is *not* Pareto inefficient. Finally, we say that H_k is *Paretian* if, for any feasible set of social states, the one it commends most is always Pareto efficient. Notice now that, unless each $G_{ki}(i = 1, 2, \ldots, N)$ is an increasing function of each of $U_{ki}(i = 1, 2, \ldots, N)$, H_k would *not* be Paretian, even though, by construction, it satisfies the criterion of efficiency.[23]

One advantage of working with H_k, rather than W_k, is that H_k is in part based on observable behavior (U_{ki}, remember, is the numerical function evaluator k uses to represent the ordering on the basis of which i would choose) and in part on non-utility merits of social states (reflected in $G_{ki}(x)$,

[23] To confirm this, consider a feasible set of social states. Pick an efficient social state from that set ("efficiency" defined as above). Ignore the uninteresting case where each G_{ki} is an increasing function of each of the U_{ki}s. Consider now the projection of the chosen point on the N-dimensional sub-space of individual utilities. Clearly it is not an efficient point on the projection of the feasible set of social states on that subspace; which is another way of saying that it is not Pareto-efficient. Sen's (1970) "liberal paradox" is an instance of this observation.

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$i = 1, 2, \ldots, N$); for example, the extent to which democracy, privacy, and civil liberties are honored. One can think of the latter as the adjustments k ought to make to her evaluation, once the utility contributions to social well-being have been estimated by her. Of course, to say that the latter move consists of "adjustments" is to say neither that it is an after-thought, nor that the adjustments would necessarily be small.

Another reason economists work with H_k, rather than W_k, is that it forces them to think hard as to why they should go beyond the U_{ki}s when evaluating policies. Enthusiasm for "non-utility" features of social states can, after all, be a code for paternalism, even authoritarianism.[24] And finally, there are huge practical advantages in working with H_k, rather than W_k. Pinning down the U_{ki}s enables k to estimate the way people would respond to public policies, such as taxes and subsidies and the supply of basic needs. Suppose instead that k were to work with W_k. She would certainly know how to think ethically about social states directly in terms of individual well-being functions; but she wouldn't know which public policies to support, because she would not be able to tell how people would respond to the policies. (V_{ki}, remember, does not necessarily conform to the ordering on the basis of which person i would choose.)[25]

3.3 Indirect measures: Determinants

There is yet another way to measure well-being. It is to value well-being's *determinants*, which are the commodity inputs that produce well-being. The determinants consist of such goods as food and nutrition, medical care, clothing, potable water, shelter, access to knowledge and information, resources devoted to national security, and aggregate goods like income and wealth. In the previous two sub-sections we noted that it is possible to evaluate policies by comparing the constituents of social well-being, as in k's judgment, "Choose policy A, not policy B, because A will lead to x and B to y, and I estimate $H_k(x) > H_k(y)$." But policies can also be evaluated in terms of their effect on the determinants of social well-being. If undertaken with sufficient precision and care, either procedure would do the job. This is to say that policies can be evaluated on the basis of a suitable measure of either the constituents or the determinants of social well-being.[26]

[24] Berlin (1959) is a classic on this (often hidden) code. He noted that Marx's notion of "false consciousness" has been used by tyrannies to justify their actions.

[25] In theoretical welfare economics, when the model being subjected to analysis is of an aggregate form, say, involving (aggregate) consumption, investment, and leisure, such constituents as health and education are often assumed to be subsumed under the former two, and social well-being is regarded to be based solely on individual utilities. The point in such exercises frequently is to study the way various forms of the function H_k reflect concerns about equality among people.

[26] Rawls' two principles of justice (Rawls, 1972: 302–3) are directed in part at the production and distribution of certain constituents (political and civil liberties) and in part at the

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3.3.1 Social cost–benefit analysis. To illustrate, consider an investment project, which is a flow of the services of commodity inputs and outputs. The project therefore is a flow of the determinants of well-being. The social worth of an input or output is the contribution it makes to social well-being. That contribution is called the commodity's *shadow price*, or alternatively, its social scarcity price (or alternatively still, its accounting price). Now a commodity's shadow price isn't necessarily the same as its market price. To take one example, the price received by sufferers from urban pollution in, say, Dhaka is zero, but the shadow price is not zero, because Dhaka residents suffer from bronchial disorders due to the pollution. To take another example, in an evaluative framework where poverty in income and wealth is a concern, the shadow price attributable to a project benefit flowing to the needy would be higher than to a commensurate benefit flowing to the rich. And so on. However, shadow prices depend not only on ethical values, technology, and available resources, but also on the institutions that influence the allocation of resources. Shadow prices do a huge amount of work for us: they summarise both facts and values. Project evaluation involves valuing the project inputs and outputs in terms of their shadow prices and then aggregating them in a suitable way. The way the aggregation is done is this.

The difference between the sum of the shadow values of a project's outputs in a given period and the sum of the shadow values of the inputs in that same period is called the project's *shadow profit* for that period. The project's shadow profit is therefore estimated for each year of its life. What remains to be estimated is a set of social discount rates, one for each pair of adjacent periods, that would enable the evaluator to aggregate the project's flow of shadow profits. (Social discount rates are themselves intertemporal shadow prices.) It can be shown that, in evaluating a project, the sum of the present discounted flow of the project's shadow profits is the appropriate aggregate index: if the present discounted sum is positive, the project should be accepted; if it is negative, the project should be rejected.

To see why this is the correct criterion for project evaluation, let social states now be denoted as vectors. The idea is to regard a social state as a complete allocation of goods and services, covering who gets what and receives what. Let $\boldsymbol{x}$ be a social state. A project is a perturbation to $\boldsymbol{x}$. Call the perturbation $\Delta\boldsymbol{x}$. Suppose person k is the project evaluator. Her social well-being function is $W_k(V_{k1}(\boldsymbol{x}), V_{k2}(\boldsymbol{x}), \ldots, V_{kN}(\boldsymbol{x}))$, as in equation (1). If the project were undertaken, social well-being would change by the amount,

$$(3) \quad \sum_i (\partial W_k/\partial V_{ki})(\partial V_{ki}/\partial \boldsymbol{x}) \cdot (\Delta \boldsymbol{x}).$$

production and distribution of certain determinants (income and wealth): Rawls offered a mix of constituents and determinants. In the text I am claiming that it is in theory possible to evaluate exclusively in terms of one or the other.

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The expression represents the sum of all the small changes ($\Delta \boldsymbol{x}$) that are brought about by the project, valued at shadow prices $\Sigma_i(\partial W_k/\partial V_{ki})(\partial V_{ki}/\partial \boldsymbol{x})$. So, expression (3) should be thought of as the social profitability of the project, evaluated by k at shadow prices. Since time is implicit in expression (1), expression (3) denotes the present discounted sum of the flow of the project's shadow profits.[27]

There is a beautiful relationship between the present discounted sum of the flow of a project's shadow profits and the (true) wealth of a nation. We are to identify a capital asset not only in terms of its characteristics, but also its location, date, and the identity of the person or group who owns it. By *inclusive wealth* we mean the shadow value (or social worth) of *all* capital assets, including not only manufactured assets, but also knowledge and skills, and natural capital (e.g., ecosystems). Since W_k is a function of the entire distribution of goods and services, the shadow value of a unit of a particular type of capital asset owned by someone who is poor would be greater than the shadow value of a unit of that same type of capital asset owned by someone who is rich, other things being equal. So inclusive wealth is not simply the sum of individual wealths, but is a weighted sum of individual wealths. It can be shown that the sum of the present discounted flow of a project's shadow profits is its contribution to the economy's inclusive wealth, meaning that wealth, when inclusively measured, is an aggregate index of social well-being. As a nation's wealth is the social worth of its capital assets, it is a measure of the nation's opulence. That isn't to say that inclusive wealth *is* social well-being, it is to say only that a policy reform (e.g., an investment project) increases social well-being when, and only when, it raises inclusive wealth.

3.3.2 Inclusive wealth and sustainable development: theory. Interestingly, social well-being and inclusive wealth move together *over time* as well. It can be shown that, under a well-defined set of circumstances, the necessary and sufficient condition for social well-being to be a non-declining function of time is that inclusive wealth per head is a non-declining function of time. The theorem has been proved and put to work in an increasingly general context by Pearce and Atkinson (1995), Dasgupta and Mäler (2000) and Arrow et al. (2003a,b). The theorem gives operational

[27] Discussions on even the choice of appropriate discount rates in public projects (i.e., social discount rates) have typically been about facts, not values: should the rates chosen correspond the market rate of interest and, if so, which one? On this see Arrow et al. (1996). Differences of views on social discount rates are usually handled by sensitivity analysis. See Section 4.2 below.

The briefest account I know of project evaluation is in Daily et al. (1999). For fuller discussions, including practical methods for estimating shadow prices and the associated social discount rates, see Arrow and Kurz (1970), Little and Mirrlees (1968, 1974), Dasgupta et al. (1972), and Dasgupta (2004 [2001]).

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meaning to the intuitive notion of *sustainable development*, made popular by the famous Brundtland Commission Report (WCED 1987), which defined it "as development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The Brundtland Commission's definition of sustainable development focuses on the maintenance of the overall productive base of an economy. But as the Commission Report left it, that base is an unspecified aggregate of the determinants of social well-being. The theorem that connects movements over time of social well-being and inclusive wealth per head tells us how to measure the overall productive base. Since it links a precise aggregate of the determinants of social well-being to social well-being itself, the theorem also tells us why we should be interested in the productive base. In Section 5.5 I report on an application of the theorem to the world's poorest regions, so as to explore the question whether economic development over the past three decades there has been sustainable.

3.3.3 Why determinants?. Following Sen (1987) and Drèze and Sen (1990), Anand and Ravallion (1993) and UNDP (1994: 14–15) have chastised those who regard gross national product (GNP) to be an index of social well-being, on the grounds that it is a measure of a country's opulence. The criticism is faulty in two ways. First, opulence is a stock concept, and GNP is not a return on any index of opulence that I am aware of.[28] Secondly, and more importantly, the connection I have just drawn between the constituents and determinants of well-being tells us that it is not a mistake to seek to measure social well-being in terms of an index of opulence. The point isn't that opulence misleads, but rather that we should search for the *right* measure of opulence. And the right measure of opulence is (inclusive) wealth.

Roughly speaking, the constituents and determinants of well-being can be thought of as "ends" and "means," respectively. Ethicists regard the constituents as the obvious objects of study, in contrast to economists and statisticians, who gravitate towards the determinants. There is a cultural divide here and they often clash. Consider, however, education and skills. Are they constituents or determinants? They are in fact both. The acquisition of education is partly an end in itself and partly a means to increasing future opportunities (or "capabilities"), by improving skills. Aristotelian ethics emphasizes the former, while the economics of human capital stresses the latter. That education has both flavors doesn't pose problems, so long as we are able to track the two. Double-counting is a virtue when a commodity offers joint benefits. Education ought to be counted twice. (It is the same with health.) Schultz (1961, 1974) and Becker

[28] One can even argue that, because it doesn't take note of capital depreciation, GNP cannot be a measure of opulence. See Section 5.

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(1964, 1983), who pioneered the economics of human capital, contributed greatly to our understanding of the process of economic development, by drawing attention away from Aristotelian virtues. If governments in today's poor countries were persuaded that education doesn't foster growth in national wealth, but is solely an end in itself, they would have an excuse to neglect it even more than they currently do. Governments could argue that poor countries cannot afford such luxuries as education.

Why bother about the determinants of well-being, when the natural thing would be to measure the real thing, namely, the constituents?

There are several reasons. First, without an understanding of the ways in which the constituents are "produced" by their determinants, we would not know which institutions best promote human interests and which ones are likely to prove disastrous. Should markets be relied upon to produce and allocate food, clothing, shelter, and information? Should the State be involved in the supply of education, public-health care, roads, and ports? Should local communities be engaged in the management of spatially confined natural resources? What kinds of institutions should people depend upon for insurance and credit? And so on. Secondly, policy alternatives, such as investment projects, are easiest to frame in terms of the commodity determinants of well-being. It is not an accident that projects are formulated in terms of commodity flows. (At their rawest, commodity flows are what investment projects involve.) And thirdly, shadow profits are a linear index of a project's inputs and outputs. Linearity greatly eases estimation.

3.4 Social well-being functions and Arrow's voting rules

Where does Kenneth Arrow's celebrated Impossibility Theorem fit into this? There have been a number of readings of Arrow's monograph (Arrow 1963 [1951]). Several do not fit well with the axioms Arrow imposed on the mechanisms for social choice he wished to study. My own reading is this:

The title of Arrow's monograph is Social Choice and Individual *Values*. Arrow's concern was to discover *democratic voting rules*, in a world where voter k ranks social states in accordance with W_k (equivalently, H_k).[29] Arrow's presumption was that people cast their votes on the basis of their ethical evaluation of social states. In the theory I have just sketched, W_k in expression (1) reflects k's values. To say that people differ in their values is to say that the W_ks differ. Arrow assumed that the only information voter k is allowed to provide on her ballot paper is the ordering of social

[29] Majority rule is an example of a voting rule. What I am calling a "voting rule" was named a "social welfare function" by Arrow (1963 [1951]). There is, unfortunately, a profusion of technical terms in modern economics. But as long as we use them consistently, we should not run into problems.

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states induced by W_k and that the only pieces of information the voting rule is permitted to entertain *are* the individual orderings. A voting rule aggregates the N orderings induced by the W_ks into a final ordering. Social choice is made on the basis of that final ordering. Arrow's voters fill their ballot papers on the basis of ethical considerations (W_k); they do not vote on the basis of their personal interest (V_k), nor on the basis of what they would personally have chosen (U_k). Arrow's Impossibility Theorem states that if the number of social states exceeds two, it is not possible to devise a voting rule satisfying a set of simple ethical principles (e.g., that it should be democratic, that it should yield an efficient outcome) if the set of possible W_k functions is unrestricted. But the theorem prevents no one from reasoning ethically.[30]

Typically though, people don't vote directly on social states. Depending on the context, the alternatives on which people vote are policies, or laws, or rules, or candidates; but ultimately it is social states on which people vote. To take an example, even when people cast their votes for political candidates, they in effect vote for social states, because candidates represent policies, and policies lead to social states. Once again, however, disagreements over facts rear their head. Thus imagine that there are several policies (candidates) to choose from. Even if all voters have the same ethical ordering of social states (i.e., W_k and the V_{ki}s in expression (1) are independent of k), they would rank policies differently if they were to read the pathways that lead policies to eventualities differently. Arrow's Impossibility Theorem states that if the number of policies exceeds two, it is not possible to devise a voting rule satisfying a set of simple ethical principles (e.g., that it should be democratic, that it should yield an efficient outcome) if voters' beliefs about the character of the pathways that lead from policies to eventualities are drawn from an unrestricted set of belief systems. But the theorem does not prevent people from reasoning ethically. In other words, even if people hold the same ethical

[30] The restriction that individual orderings and *only* individual orderings are permitted to be introduced in the aggregation exercise has been much criticized in the social choice literature. But no one has provided evidence of what additional information could be made permissible at a polling station without jeopardizing the electoral process. Intensity of feeling? That would be subject to serious moral hazard. Special needs of the voter? That would violate a central principle of democracy, namely, equal citizenship (anonymity of the voter). Interpersonal comparisons of well-being? But who is to conduct the comparisons, something that are expected to have already been undertaken by the civic minded voters when they cast their votes? And so forth.

Voting rules in many national elections (e.g., presidential elections in the USA, parliamentary elections in the UK) require voters to disclose even less information than Arrow made a requirement in his theory. Election rules generally insist that voter k names only the candidate who is highest on the ordering induced by W_k. The restriction is not only unnecessary, but overly limiting too: it can distort election outcomes when the number of candidates exceeds two. On this see Dasgupta and Maskin (2004).

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values, the Impossibility Theorem rears its head if people believe in diverse theories concerning the ways in which various agencies in society would be expected to respond to policies and the ways in which Nature would react to the treatment meted out to it. In Section 5 we shall see how disagreements over such facts have dominated 50 years of development economics.

It is a deep insight of modern economics that we should not worry about others when going about our daily business in the market place for private goods. The market system thereby helps to save enormously on information costs: when shopping, we do not have to look constantly into other people's affairs so as to determine who needs what and why. But markets are an effective institution only for transactions in private goods. The public sphere includes the supply of public goods and merit goods (more generally, externalities), one class of such goods being the (public) institutions that are required to ensure that markets work well. Modern economics urges people to worry about others in the public sphere and vote on the basis of the public interest, which in the notation here, are the H_ks (or the W_ks). Civic awareness, or so modern economists have shown, is to recognize and embrace this dichotomy between the public and private spheres of our lives.[31]

TRANSITION

4. TRAGIC CHOICES, GENDER-BASED ALLOCATIONS, AND PARTIAL ORDERINGS

There are contemporary ethicists who question the basis on which modern welfare economics is constructed, by claiming that not all states of affairs are rankable. Some maintain that to imagine that choices are made on the basis of an underlying ordering is to misconceive personhood (Sen 1987; Putnam 2002). Ethical reasoning, they say, can at best yield *partial* orderings of alternatives, not orderings.[32] In the language of Section 2, this means that if k were ethically sensitive, he would be unable to construct not only W_k (or H_k), but the individual V_{ki}s (or the U_{ki}s and the G_{ki}s) as well, each of which, remember, was taken to be a numerical representation of an *ordering* of alternatives. There is even the suggestion by ethicists that when the alternatives are "tragic," to claim to be able to rank them all is to reveal oneself as being shallow, lacking in the Higher Sensibility.[33]

[31] See especially Arrow (1974).

[32] "Orderings" and "partial orderings" were defined in footnote 7.

[33] Sen, like Isaiah Berlin before him, has argued in favor of ethical theories that admit a plurality of human values, and has remarked: "To insist that there should be only one homogeneous magnitude that we value is to reduce drastically the range of our evaluative reasoning" (Sen 1987: 77). Recall though that the ethical reasoning k deployed to arrive at the V_{ki}s in expression (1) in the text insists on no such thing. In fact, it involves the reverse

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4.1 Personal choice

In the context of personal choice, the origins of Agamemnon's marital difficulties have been cited as illustration (Sen 1987). Aeschylus reported that the goddess Artemis had ordered the Aegean to remain calm. As leader of the Greeks, Agamemnon was faced with a cruel choice: sacrifice his daughter, Iphigenia, so as to permit the Greek fleet to sail to Troy; or spare her, in which case the ships would remain becalmed and the Greeks suffer humiliation, possibly too an eventual attack from their enemies. Agamemnon was faced with a tragic choice and decided it was necessary to sacrifice Iphigenia. Sen speculates instead that although Agamemnon chose as he did, he would not have chosen it on the grounds that it was the less bad option, because *both options were so horrible as to be unrankable*.

But we are not offered reasons why one cannot rank tragic choices.[34] Even while acknowledging that either choice would destroy his integrity, Agamemnon could have insisted – and in at least one reading of Aeschylus' play (Williams 1993), *did* insist – that he chose the lesser of two evils, even that it was *necessary* he chose the way he did. While the ancients, as far as I know, did not have the term "evil" in their lexicon, no disservice is done by my use of it here, because Agamemnon's dilemma has been used by Nussbaum (2000a) to illustrate tragic choices in contemporary poor societies. Nussbaum (2003: 415–16) has gone further to recommend the classics to economists and policy makers on the remarkable ground that, by reading about tragic choices they would better appreciate the tragedies befalling members of the world's poorest households; which, if you think about it, is pretty insulting to the many social scientists who have discovered such choices in the Indian sub-continent and sub-Saharan Africa and have explored the circumstances under which they are made.

In a revelatory, but now sadly under-acknowledged work, the demographer Pravin Visaria observed that the female-male ratio in India had shown a decline since the Indian Census of 1901 and was, worse, considerably less than one (Visaria 1967). In order to answer a question the epidemiologist Lincoln Chen posed in response to Visaria's finding, namely, "Where have the women gone?," D'Souza and Chen (1980), Chen et al. (1981), and Chen (1982) uncovered male bias in household allocations

of what Sen seems to be accusing modern economists of doing. Modern economists don't claim that people value some homogeneous magnitude. Instead, they see k as arriving at the homogeneous magnitudes V_{ki} *from* the plurality of values i holds. The constituents of well-being themselves reflect the plurality of values.

[34] The protagonist in William Styron's *Sophie's Choice* faced an even crueler dilemma when forced to choose one of her two children for certain death in the gas chamber. (Failure to comply would have led to the certain death of both children in the gas chamber.) Having been forced to choose thus destroyed her, but her humanity shone through when, in the closing passages of the book, she also disclosed the reason for the choice she had made.

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of food and health-care in parts of the Indian sub-continent.[35] The authors arrived at their finding by studying mortality and anthropometric statistics and inferring household commodity allocations from the statistics. A number of development economists subsequently explored the idea that in a social environment where female children are costlier to the household than male children (girls depart on marriage, and dowries can be crippling), such forms of discrimination as Visaria had observed in the census data were the response of poor households to a constantly stressful economic situation.[36]

It had not gone unnoticed by economists that a household is not a person. A household's choices reflect its internal dynamics; for example, the balance of power among its members that is likely to be founded on economic dependence, the social status of women *vis-à-vis* men, and so on. If we imagine that mothers are likely to have greater empathy with daughters than have fathers, we should expect discrimination against female children to be less in households where women are educated, or have access to paid employment, or control the household budget, other things being equal. Extending this thought, we would expect nourishment to be better and discrimination against women to be less in households where women are educated, or have access to paid employment, or control the household budget, other things being equal. There is evidence of this.[37]

There is evidence too that gender discrimination in the Indian sub-continent varies across ecological zones and rules of property inheritance; and that the character of gender discrimination in sub-Saharan Africa differs from that in the Indian sub-continent. In a wide-ranging book, Boserup (1970) observed that women have a prominent role in agriculture involving hoe farming (such as in sub-Saharan Africa), in contrast to regions (such as the Indian sub-continent) where plough farming is predominant. Boserup drew a connection between hoe cultivation, polygyny, and the position of women.

Substantiating that connection *within* Africa has proved to be difficult. In a fundamental body of work, the anthropologist Jack Goody has stressed that someone's economic importance in a system cannot be inferred only

[35] The literature emanating from them is huge. See, for example, Sen and Sengupta (1983) and Behrman (1988a,b).

[36] See especially Rosenzweig and Schultz (1982). In support of this interpretation, a sample from northern India revealed that higher-birth-order girls are discriminated against even more strongly than lower birth-order girls. See M. Das Gupta (1987).

[37] See Cochrane (1979), Behrman and Wolfe (1984), Kennedy (1989), and Sen (1990), among others. To the best of my knowledge, McElroy and Horney (1981) is the earliest study to use bargaining theory (specifically, the well-known Nash bargaining solution) to explain household commodity demands. Earlier, Kalai and Smorodinsky (1975) had developed a model of bargaining that would appear to be better suited for studying household choices (Sen, 1990; Dasgupta, 1993).

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from her involvement in agriculture, it depends also on her engagement in such complementary activities as drawing water and collecting wood fuel on a daily basis. He has used the role of women in economic activity in its widest sense to provide an explanation not only for the practice of polygyny in sub-Saharan Africa, but also for why cultivable land is awarded to married women by their spouse's clan and why men are obliged to offer bridewealth at marriage.[38]

Boserup's thesis regarding the connection between women's position in society and their role in agriculture has been applied by Bardhan (1974) and Sopher (1980) to the Indian sub-continent. They noted a North–South divide in women's life chances there, being a lot dimmer in the wheat growing North than in the rice growing South (the East falls somewhere in between). The authors observed too that the now-famous state, Kerala, is an outlier even in the South. That a prominent caste in Kerala, in contrast to those in the North, are matrilineal and that among them it is customary for female residence to be matrilocal may also have had something to do with the emergence of the divide. Evidence, such as we have, that norms of behavior in part emerge from local influences, such as the influence of one's neighbors and peer group, is consistent with this thought.[39]

My point here is not to argue in favor of, or against, the above or indeed any of a number of other explanations that have been offered for gender discrimination in the Indian sub-continent and sub-Saharan Africa. Instead, the question I want to touch upon here is whether it makes sense to interpret gender discrimination within a household in terms of the relative voices of members, each of whom is able to rank household allocations in a complete manner, or whether, because the choices are frequently tragic, it is more appropriate to imagine that they are *unable* to rank them completely.

Putnam (2002), like Sen (1987), would seem to believe that the matter can be settled by reflection. It seems to me though that the question is an empirical one. By this I don't mean determining whether undergraduates are able to rank alternatives presented to them via a computer program in a university laboratory, but whether people living in raw economic circumstances can explain why they view matters the way they do. The problem with concluding that choice mechanisms within poor households are based on partial orderings of food and health-care allocations is that we would not be able to explain *systematic* gender discrimination in many parts of the Indian sub-continent and sub-Saharan Africa. If tragic choices were non-rankable, some households would choose one way, others other

[38] See, for example, Goody (1973), Goody and Tambiah (1973), Goody (1976), and Goody et al. (1981). See also Williamson (1976).

[39] See Blume and Durlauf (2001) for a general analysis of the effect of what economists call "social preferences" on collective behavior; and Dasgupta (1993, 2002, 2003) for a model of fertility behavior that is based on such preferences.

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ways. But what we observe from the data are, after controlling for other factors, systematic biases in food and health-care allocations within the household. Until better reasons are offered than the ones put forward by contemporary ethicists, economists have little reason to reject the hypothesis they have worked with over the years.

4.2 Social choice

That *social* choice is frequently arrived at from partial orderings of alternatives has, however, been the working hypothesis in modern economics. In Section 2 we noted that the W_ks differ from one another. Even if someone evaluating a project (say, person k) were convinced that a project is socially desirable, in that expression (3) is positive, he would balk, because there are others involved in reaching a decision, and he should expect their social well-being functions to differ from his. A good project evaluator therefore conducts a sensitivity analysis of the project, by identifying ranges of values for the most contentious parameters under which the project is acceptable and ranges for which it is not acceptable. The choice mechanism would be expected to differ from place to place and from time to time. Political pressures often intrude on decision making. When it doesn't intrude, sensitivity analysis helps those involved to deliberate, discuss, and select projects in a manner that makes their choices consistent with one another over time. In fact sensitivity analysis is routinely practiced in social cost-benefit analysis.[40]

PART II: FACTS

The framework presented in Sections 2–3 is useful for classifying debates on economic policy. Imagine there are two policy options, A and B. Individuals j and k could disagree about their merits for three reasons:

(α) j and k differ in the way they measure individual well-beings. ("In assessing a person's well-being, you place far too much weight on personal income relative to education," says k to j.) In the notation of expression (1), j and k construct V_{ji} and V_{ki} differently.

(β) j and k differ in the way they conceive social well-being. ("You don't place sufficient weight on equality of well-beings," says j to k.) In the notation of expression (1), j and k construct W_j and W_k differently.

[40] See, for example, the case studies in Dasgupta et al. (1972). Nussbaum (2000b) imagines that project evaluators produce a single number (the present discounted value of the flow of social profits) and consider their job done. Of the many project evaluation reports I have read over the years, this was rarely the practice.

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(γ) j and k have different theories regarding the likely effects of the policy options. (k says to j: "You think A would result in greater impoverishment of the poor than B. I disagree."
(Corresponding disagreements could arise if j and k were to deliberate matters in terms of H_j and H_k (the left hand side of equation (2)).)

Policy discussions among professional economists usually take the form γ. In the following section I illustrate this by tracing aspects of the development of development economics. My idea isn't to offer a historical survey. What I do is to sketch a number of debates that have taken place over the decades. Not unnaturally, the selection reflects my own expertise and involvement.

5. THE DEVELOPMENT DEBATE

The economics of development is an inquiry into the poverty of nations and is concerned to discover ways out for them.[41] The subject has a wide engagement. Not only do academic economists and anthropologists study it, but government departments, non-governmental organizations (NGOs), and international agencies contribute thinking to it too. Although much has been written on the meaning of poverty, there is an intuitive sense in which people can be judged to be poor: *people are poor if they have very limited access to the resources they need to be able to function*.

5.1 Development as economic growth

This may seem overly rough and ready and aggregative. After all, there are many kinds of resources, and one can be well-off in some (food), but poor in others (health-care). Moreover, "needs" requires elucidation. (That too has elicited book-length inquiries.) And what, after all, should one mean by something being "very limited" and by someone's "ability to function"? All these are valid concerns. But at a very early stage in the development of the economics of development, *income* came to be seen as the appropriate index of the resources a person needs to be able to function. Whatever else people may need, it was argued, they need income to be able to purchase goods and services. There is no evidence in the development literature, however, that income was ever regarded as an end in itself. Investigations into the incidence and magnitude of poverty have been a recurrent activity in development economics. The World Bank's oft-cited estimate, that some

[41] In order to discuss economic policy, the objects of study in development economics used to be called "underdeveloped countries," a term that has undergone several transformations over the past five decades: "less developed countries," "developing countries," the "Third World," the "South," and so on. Some economists, including myself, merely refer to them as "poor."

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1.2 billion people live under a dollar a day, is the kind of fact that offers a glimpse of the magnitude of poverty.[42]

In moving from "personal" to "national," the obvious generalization of income is gross national product (GNP).[43] GNP is an index of the goods provided in an economy. As an index of economic development, this may seem a limitation, but even when you go beyond GNP, you find yourself returning to it. For example, if various public goods are to be supplied by government (local or national), the government would require resources. If those resources are to be obtained from taxes, there has to be sufficient income in the economy *to* tax; which brings us back to GNP. In consequence of its widespread use in policy discussions, GNP has now become so ingrained in our collective sub-conscious that, even as you ask someone, "Growth in what?," you know the answer to be "Growth in GNP."

The use of GNP as a development index has been routinely criticized as well, not just by ethicists (e.g., Bauer 1971; see also Section 5.6). This being so, its staying power may seem surprising. But there is a simple reason behind it: The belief among development economists has been that improvements in the material conditions of life are necessary before all else. It is because this belief could only be substantiated or refuted by an appeal to facts, not values, that the long-running controversy on the question whether income is a suitable index of development has been over facts.

To trace the origins of the dominance of GNP in development thinking, it helps to recall a passage in an article that gave rise to the modern literature on economic development:

> The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 or 5 per cent of its national income or less, converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income or more. This is the central problem because the central fact of economic development is rapid capital accumulation (including knowledge and skills with capital).

Now, this passage was not written by a Stalinist, nor by a descendant of some nineteenth-century English entrepreneur obsessed with capital accumulation. It was written by the late W. Arthur Lewis (1954), as

[42] The first of what has become an annual *World Development Report* of the World Bank, was centered on poverty in sub-Saharan Africa and the Indian sub-continent (World Bank 1978). The *Report*'s fourth chapter bore the title "Prospects for growth and alleviation of poverty." The annual *Report*'s immediate focus returns periodically to poverty (World Bank 1990, 2000). Much earlier, the Perspective Planning Division of the Government of India produced a blueprint for guaranteeing a basic minimum income for all (Pant et al. 1962). Nothing came of it though.

[43] For our purposes here, national income and GNP can be regarded to be the same.

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"humane" an economist as you could find. And his reasoning went something like this:

Imagine that a dollar's worth of investment converts itself into a perpetual flow of an additional 10 cents of income each year, which is to say that the real rate of return on investment is 10 percent per year. This means that the capital sum required to generate a dollar of income annually is 10 dollars. So, if 5 percent of GNP were invested each year, GNP would grow at an annual rate of 0.5 percent (0.05/10), whereas, if 15 percent of GNP were invested each year, GNP would grow at an annual rate of 1.5 percent (0.15/10). Suppose population is expected to grow at 1 percent annually. Then, at a 5 percent investment rate GNP per capita would *decline* at 0.5 percent per year, whereas at a 15 percent investment rate GNP per capita would *increase* at 0.5 percent per year. One path would represent decay, the other path, development.[44]

5.2 The quality of economic growth: investment in what?

A research agenda's fecundity can be measured by the number of answerable questions it gives rise to. By this count the agenda proposed in Lewis' paper was enormously fecund. First, it is all very well to raise the rate of investment, but how would anyone know what the country should be investing in? (Heavy industries (e.g., steel)? Light industries (e.g., garments)? Agriculture? Roads, ports, and electricity? Public health? Primary education? Reproductive health programs?) Secondly, who should do the investing: the government or the private sector? Third, and relatedly, should the government have a "strategy" for economic development (e.g., creating heavy industries)? Fourth, should we expect growth in GNP to lead to a reduction in absolute poverty within society even without the active agency of government? And so on.

The fourth question gave rise to the famous "trickle down" view of economic growth, the thought being that if the economy were to take off, no one would be left behind: formal employment would be created and wages would rise. Most development economists will give you a straight answer if you ask them whether economic growth can be relied upon to trickle down reasonably fast. It won't be the same answer though. However, no economist will ask you why you want to know, which goes to show that there is a common ethical basis on which the development debate has been conducted. Even though the motivation behind the question is prompted by ethical concerns, the question itself concerns the factual. The problem

[44] It is worth noting in passing that investment rates in East Asian countries (e.g., South Korea, Taiwan) during the 1980s frequently exceeded 40 percent of GNP.

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economists face is that the statistics are confounding. So the debate has been and continues to be, over facts.[45]

The controversy over trade liberalization, and more recently, "globalization" through free international capital movements, is in part a response to the third of the above questions, which has to do with choice of appropriate economic policies. An earlier intuition, that economic growth is facilitated by protection of domestic industries against foreign imports has been argued by a number of trade and development economists as being dubious (Bhagwati and Desai 1970; Bhagwati and Srinivasan 1975). Protectionist policies not only distort domestic prices in such a way as to waste resources, but they also help to create a social environment where corruption is able to thrive, so that even more resources are wasted (Krueger 1978; Bhagwati 1982). Moreover, theoretically at least, learning through work in advanced export sectors would be expected to enhance human productivity, thereby economic performance (Lucas 1993). The phrase "export led growth" is an expression of this thought.

The debate continues. Some economists have observed that the governments of recent development successes, particularly Taiwan and South Korea, protected selected industries from foreign competition and advanced the cause of a selected group of export industries by offering what in effect were subsidies (Amsden 1989; Wade 1990). However, those favoring less government intervention ask in return whether those economies would have performed even better had their governments not tried to pick future industrial winners. Being counterfactuals, these questions are very hard to answer. But they involve analyses of facts, not values.

Of the four, it is the second question that has proved to be the most contentious among public intellectuals. Until recently even the Left-Right distinction was frequently drawn in terms of an answer to it. But the question is bogus. You cannot judge who should do the investing (public, private, or communitarian) without an understanding of the strengths and weaknesses of the various institutions in the economy. As we noted in Section 2, modern economics tells us that certain well-defined activities ought almost invariably to be left to the private realm, certain others to the realm of markets, others still to the public arena. But there is a wide range whose placement can be determined only by comparing the efficiency with which institutions operate and the other public policies and norms of behavior that are in place. It is all well and good to imagine, as I did in my illustration of Lewis' reasoning, that the rate of return on investment is 10 percent per year. But the rate of return on investment could be woefully low, perhaps even negative, if there is widespread corruption in the public sector, or property rights to capital assets are insecure (see below), or the

[45] A recent statistical analysis issued from the World Bank, by Dollar and Kraay (2000), had the revealing title "Growth *Is* Good for the Poor."

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State is predatory. Growing recognition of this has meant that although development economists discussed *policy* in earlier years, they now study the character of *institutions*. It is perhaps needless to say, though, that the two are interrelated: good policies cannot be plucked from air, the efficacy of economic policies depends on the character of institutions.[46]

The development of the theory of social cost–benefit analysis for poor countries was a response to the first question. We observed in Section 3.3 that the theory was built on wide ethical foundations. In the event, though, not much use has been made of social cost-benefit analysis in the choice of investment projects in poor countries: the techniques were felt to be overly complicated.[47] I don't know if this has mattered hugely, because until the late 1970s the productive gains enjoyed by an economy from having a healthy and educated population were generally not appreciated. Not only were political leaders in most poor countries uninterested in primary health-care and basic education, but the techniques of social cost-benefit analysis were designed mainly for industrial and agricultural projects. However, growing empirical evidence of the validity of a theory of economic development in which human capital formation plays a central role (Leibenstein 1957, on health; Schultz 1961, 1974, and Becker 1981, 1983, on education), meant that the long-held belief that steel mills in the world's poorest countries yield higher social profits than schools and public health programs was false. One implication of the theory of human capital is that improvements in education and health are not only consonant with growth in GNP, but are also sources of economic growth. Obvious though this implication may sound today, the idea that education is an engine of macroeconomic growth was formulated in a testable model only recently, by Lucas (1988). The widespread acceptance of human capital theory is an instance of how the discovery of facts is absorbed even in the social sciences. But its general absorption took time.[48]

5.3 Growth *vs.* distribution

GNP is an aggregate measure, estimated on the basis of market prices. If development economics was to be built on respect for the individual human being, it had to be attentive to the distribution of income, especially to the incidence of poverty at the level of the individual. It is no more than

[46] The World Bank's annual *World Development Report* is a good indicator of the evolution of thinking on economic development. World Bank (1997, 2002) were devoted to the role of the state and to the building of productive institutions.

[47] See Little and Mirrlees (1991) for an assessment.

[48] Within the last few years, the World Bank has devoted attention to the role of health and knowledge in increasing productivity and the quality of life (World Bank 1993, 1998), as have Dreze and Sen (1995).

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a banality that a country's GNP can be large even while its distribution is highly unequal and even while some live in abject poverty. Nor is it more than a banality that a nation can enjoy huge private incomes but suffer from public squalor. It is however not a banal observation that there may be a conflict between the prospects of large GNP in the future and equality in the distribution of contemporary income. The latter observation is the source of the long-standing debate on growth versus distribution.

The conflict can be fuelled by two forces. First, if the rich in fact invest more than the poor (because, say, they can afford to!), a redistribution in favor of the poor would reduce the rate of investment and thereby economic growth, other things being equal. Secondly, redistribution may blunt incentives to work, to take risks, to invest, more generally, to undertake productive activities. It is a remarkable fact that the latter possibility was formulated in a meaningful way only recently, in a bold and original paper by Mirrlees (1971). Mirrlees' article showed clearly that whether the incentive effects are significant can only be discovered empirically, by studying the demand for leisure (and risk-avoidance), and by uncovering the productivity of work (and risk). An early theoretical exercise by Atkinson (1973) on a version of Mirrlees' model suggested that the incentive effects can in principle be so powerful, that even as egalitarian an ethic as that of Rawls (equation (1b)) could recommend low marginal tax rates on high incomes. The implication was that although governments ought to be engaged in income transfers, they ought not to be as vigorous as egalitarians might instinctively want them to be. Empirical work at the World Bank (Chenery et al. 1974; Ahluwalia 1976a,b), which showed that poor countries in the contemporary world could enjoy economic growth with some redistribution, was consistent with this finding.

Set against the above two reasons behind a conflict between growth and redistribution (more generally, between efficiency and equity) are drivers that go the other way. If, for example, small agricultural farms are more productive than large ones (say because it is easier for the land owner in small farms to monitor farm laborers' work effort; Eswaran and Kotwal 1985), a redistribution of land in favor of the landless could enhance economic growth. Adelman and Morris (1973) had earlier uncovered empirical evidence that land redistribution in South Korea and Taiwan had been an engine of economic growth there.

A second driver was identified with health, which is an aspect of human capital. Using findings by nutritionists and epidemiologists, it has been argued that investment in nutrition and health-care for the poor could increase their productivity to an extent that the economy-wide labor productivity would increase. It has been argued also that markets alone should not be expected to eliminate hunger and malnutrition speedily. Perhaps economic growth trickles down, but it does not cascade down.

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The reasoning is this:

Stunting is a reflection of long-term undernourishment, while wasting is a manifestation of short-term undernourishment. Both are detrimental to the capacity for physical work, where strength and endurance are needed. Moreover, the energy required for maintaining human life is substantial, in that 60–75 percent of the energy intake of someone in daily nutrition balance goes toward maintenance, the remaining 40–25 percent is spent on "discretionary" activities (work and leisure). Maintenance requirements are therefore like fixed costs, meaning that the metabolic processes converting nutrition intake into nutritional status are non-linear; that is, the effects on the nutritional status of a marginally undernourished person of small alterations in their mean nutrition intake are amplified, they are not proportional to the alterations. Dasgupta and Ray (1986, 1987) showed that because of such non-linearities, markets cannot eliminate undernutrition easily. The point is that the undernourished are at a severe disadvantage in their ability to obtain food. Since their capacity to work is impaired, the undernourished are unable to offer the quality of work needed for obtaining the food they require if they are to improve their nutritional status. It was shown as well that over time undernourishment can be both a cause and consequence of someone falling into a *poverty trap*. Because undernourishment displays hysteresis (there are further positive feedbacks between nutrition and infection), poverty can even be dynastic. Once a household falls into a poverty trap, it can prove especially hard for descendants to emerge out of it.[49] A similar analysis can be provided for education (Heckman 2000). Establishing universal primary health-care and education redistributes assets by creating human capital among those who own few other assets. The move raises inclusive wealth, not only in the present, but also in the future.

The pathways triggered by these two drivers (land ownership and health and education) suggest that it is possible not only to espouse economic growth *with* redistribution, but that one can even advocate patterns of redistribution *before* economic growth takes place (Adelman 1979; Deininger and Squire 1998). Notice once again that the confounding problems in all this have involved facts, broadly construed; not values.[50]

[49] I have discussed these pathways in greater detail elsewhere (Dasgupta 1993, 1997). For a historical account of the way improvements in nutrition intake and economic development reinforced each other during the economic rise of the West, see Fogel et al. (1983) and Fogel (1994, 2004).

[50] A frequent illustration is the contrast offered by South Korea and Ghana. GNP per head was roughly the same in the two countries in 1960. But South Korea enjoyed one towering advantage over Ghana: the government in South Korea had effected land reform and introduced universal primary education. That early advantage shows today, in that when GNP is measured in US dollars, the ratio of South Korea's and Ghana's GNP per head is of the order of 20:1.

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5.4 Female education and fertility

It simply isn't possible not to notice from demographic evidence that in the contemporary world, the world's poorest regions have experienced the fastest rate of population increase. Sub-Saharan Africa and the Indian sub-continent – the world's poorest regions – have experienced unprecedented population growth over the past four decades, averaging well over 2 percent per year. Declines in child mortality rates there were not matched by declines in fertility rates, at least, not until recently in some parts of India and Bangladesh. Is there a connection between poverty and fertility? What accounts for the persistence of high fertility rates in the poor world?[51]

Caldwell (1980) documented a number of historical cases and suggested that mass education can be expected to reduce high fertility rates. Subsequent writings on population growth in poor countries have stressed that there is a negative link between education (especially female education) and fertility. So it is now a commonplace that an absence of female education is a prime cause of pro-natalism (e.g., Sen 1994, 1999).

But there are two problems with the latter viewpoint. First, the extent to which fertility-decline "responds" to increases in female education in both time series and cross section data differs substantially across space and time.[52] Secondly, fertility rates in the world's poorest regions remained much the same until recently, even while infant mortality rates declined; which means that there must have been other significant reasons for the pro-natalism: the lack of female education could hardly prescribe an invariant fertility rate. In any event, Susan Cochrane, to whom we owe the first, clear studies showing the links between female education and fertility reduction, was herself reluctant to attribute causality to her findings (Cochrane 1979, 1983), as have investigators studying more recent data (Cohen 1993; Jolly and Gribble 1993), for the reason that it is extremely difficult to establish causality. Women's education may well reduce fertility. On the other hand, the initiation of childbearing may be a factor in the termination of education. Moreover, even when education is made available by the state, households may choose not to take up the opportunity: the ability (or willingness) of governments in poor countries to enforce school attendance is often greatly limited. The private costs and

[51] *Total fertility rate* (TFR) is the number of children who would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates. It is the best single index of natalism. In the late 1970s, TFR in sub-Saharan Africa was 6.6, that in the Indian sub-continent, 5.3. In the mid 1990s, the figures were 5.6 and 3.4, respectively. As a matter of comparison, we note that the corresponding figures for the world as a whole were 3.7 and 2.8.

[52] Formally, the (female) education elasticity of fertility varies widely. there are also places in Africa where the elasticity has been found to have the "wrong" sign: increases in primary education for women have been associated with *increases* in TFR (Jolly and Gribble 1993).

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benefits of education and the mores of the community to which people belong influence their decisions. It could be that the very characteristics of a community that are reflected in low education attainment for women are also those giving rise to high fertility; for example, absence of associational activities among women, or lack of communication with the outside world, or inheritance rules that place women at a disadvantage.[53] Demographic theories striving for generality would regard both women's education and fertility to be "endogenous" variables. The negative relationship between education and fertility in such theories would be an association, not a causal relationship. The two variables would be interpreted as "moving together" in samples, nothing more.

The Green Revolution of the early 1970s enabled world food production to keep pace with world population growth. I believe this fact led social scientists to conclude during the 1980s that, even in the world's poorest regions population is not a problem.[54] But cereal yields have stagnated in recent years, even while population has continued to grow at high rates. Moreover, there is not much area left on the globe that is agriculturally promising. These twin facts may be a reason why economic demographers appear now to have shifted to the view that high population growth has hampered economic development in the world's poorest regions (Birdsall et al. 2001). But this revised viewpoint suffers from the same weakness as the one which says that high population growth has posed no problems for economic development there: both regard population change to be an exogenous factor. Excepting for societies where fertility has been restricted by government fiat (as in China), population change should not be seen as being exogenously given. Below I explore a recent point of view that is based on institutional and ecological fundamentals, not female education, nor fertility behavior. In order to elaborate on the viewpoint, I discuss the role the local natural-resource base plays in rural life among the world's poorest. I argue that to ignore that base leads generally to wrong policy prescriptions.[55]

5.5 The role of natural capital in rural lives

The issue in fact is broader than the neglect of the local natural-resource base in *development* economics. Twentieth-century economics, more generally, has in large measure been detached from the environmental sciences. Judging by the profession's writings, we economists see Nature

[53] Some of these issues were discussed in Section 4.1.

[54] See, for example, Kelley (1988). Sen (1994) was even contemptuous of those ecologists who expressed doubts about Earth's capacity to sustain 8–10 billion people at a reasonable standard of living.

[55] The thesis has been developed more fully in Dasgupta (1982b, 1993, 2003, 2004, 2004 [2001]) and Dasgupta and Mäler (1991).

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at best as a backdrop from which resources can be considered in isolation and we regard the processes that characterize the Earth System to be linear. Moreover, macroeconomic forecasts routinely exclude environmental resources. Accounting for Nature, if it comes into the calculus at all, is an afterthought to the real business of "doing economics."

One can argue that this practice has given rise to a puzzling cultural phenomenon: One group of scientists (usually earth scientists) see in humanity's current use of Nature's services symptoms of a deep malaise (e.g., Ehrlich and Ehrlich 2004; Steffen et al. 2004), even while another group of scientists (usually economists) document the fact that people today are on average better off in many ways than they had ever been and wonder why the gloom (e.g., Simon 1990; Johnson 2001). In ignoring the role of natural capital in economic activities, development economists have merely followed their professional colleagues. However, while policies and institutions matter, ecology matters too. The neglect of Nature has been not only unfortunate, but ironic too, because one has only to think of agricultural land, threshing grounds, grazing fields, village tanks and ponds, woodlands and forests, rivers, and water holes to get a picture of inland villages; and of woodlands and forests, coastal fisheries, mangroves and coral reefs to get a picture of coastal villages to recognize the importance of geographically localized natural resources in the lives of the rural poor. Recall also that some 60–70 percent of people in the world's poorest regions live in rural areas. Nevertheless, barring agricultural land, natural capital has been absent from most of the models on the basis of which development economists have drawn policy recommendations. Leading books on the economics of development ignore the local natural-resource base and the wide variety of institutions that have evolved for managing them.[56]

5.5.1 Property rights and the local commons. Talk of capital assets makes one think of the ownership of those assets, and thence to the *rights* to those assets. Who owns the assets that characterize the local natural-resource base? Anthropologists and economists working at the fringes of official development economics have discovered that, barring agricultural land, they are mostly neither private nor the property of the State, but are communally owned: They are the *local commons*. As a proportion of total assets, the presence of communal assets ranges widely across ecological zones. In India the local commons are most prominent in arid regions,

[56] As examples, see Dreze and Sen (1990) and Ray (1998). I have grumbled about the absence of natural capital from official development economics many times before. (See, for example, Dasgupta, 1982b, 1993, 2004, 2004 [2001]; Dasgupta and Mäler, 1991). Since 1996, Professor Charles Perrings, eeditor of the journal *Environment and Development Economics* (Cambridge University Press), has been active in promoting the inclusion of natural capital in development economics.

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mountain regions, and unirrigated areas; they are least prominent in humid regions and river valleys. (There is a rationale behind this, based on the need to pool risks.)

Are they important? In a pioneering study, Jodha (1986) reported evidence from over 80 villages in 21 dry districts in India, that among poor families the proportion of income based directly on their local commons is in the range 15–25 percent. In a study of 29 villages in south-eastern Zimbabwe, Cavendish (2000) arrived at even larger estimates: the proportion of income based directly on the local commons is 35 percent, with the figure for the poorest quintile reaching 40 percent.

Are the local commons managed communally? Not invariably, but in many cases they are, or have been in the past. Where they are managed, the commons aren't open to all; but only to those having historical rights, through kinship ties and community membership. In short, the local commons usually aren't open to outsiders. Communal management of local resources makes connection with *social capital*, viewed as a complex of interpersonal networks, and hints at the basis upon which cooperation has traditionally been built. As the local commons have been seats of non-market relationships, transactions involving them are often not mediated by market prices. So their fate can go unreported in national economic accounts. And they often are. However, a large empirical literature has confirmed that resource users in many cases cooperate, on occasion through democratic means. Case studies have shown too that cooperation can forestall rural and coastal communities from experiencing the "tragedy of the commons."[57] The empirical literature on the local commons is valuable because it has unearthed how institutions that are neither part of the market system nor of the State develop organically to cope with resource allocation problems.

Thus far, the good news about communitarian institutions. There are, however, two pieces of bad news. First, a general finding from studies on the management of local commons is that entitlements to products of the commons is frequently based on private holdings: richer households enjoy a greater proportion of the benefits from the commons. Beteille (1983), for example, drew on examples from India to show that access to the commons is often restricted to the elite (e.g., caste Hindus). Cavendish (2000) has reported that, in absolute terms, richer households in his sample took more from the commons than poor households. That women are sometimes

[57] See Chopra et al. (1989), Feeny et al. (1990), Ostrom (1990), Bromley et al. (1992), Baland and Platteau (1996), and the references there. The economic theory of the local commons was developed in Dasgupta and Heal (1979: ch. 3). Ostrom (1990: ch. 3) ranges over a number of long-enduring local commons in Nepal, the youngest of which has been found to be 100 years old, the oldest more than 500 years old.

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excluded has also been recorded – for example, from communal forestry (Agarwal 2001).[58]

The second piece of bad news is that local commons have degraded in recent years in many parts of the poor world. Why should this happen now in those places where they had been managed in a sustainable manner previously?

One reason is deteriorating external circumstances, which lower both the private and communal profitability of investment in the resource base. There are many ways in which circumstances can deteriorate. Increased uncertainty in property rights is a prime example. You and your community may think that you together own the forest your forefathers passed on to you, but if you do not possess a deed to the forest, your communal rights are insecure. In a dysfunctional state of affairs, the government may confiscate the property. Political instability (in the extreme, civil war) is another source of uncertainty: your communal property could be taken away from you by force. Political instability is also a direct cause of environmental degradation: civil disturbance all too frequently expresses itself through the destruction of physical capital.

When people are uncertain of their rights to a piece of property, they are reluctant to make the investments necessary to protect and improve it. If the security of a communal property is uncertain (owing to whichever of the above reasons), the private returns expected from collective work on it are low. The influence would be expected to run the other way too, with growing resource scarcity contributing to political instability, as rival groups battle over resources. The feedback could be "positive," exacerbating the problem for a time, reducing private returns on investment further. Groups fighting over spatially localized resources are a frequent occurrence today (Homer-Dixon 1999). Over time, the communitarian institutions themselves disintegrate.[59]

The second reason is rapid population growth, which can trigger resource depletion if institutional practices are unable to adapt to the increased pressure on resources. In Cote d'Ivoire, for example, growth in rural population has been accompanied by increased deforestation and reduced fallows. Biomass production has declined, as has agricultural productivity (Lopez 1998). However, as we noted earlier, rapid population growth in the world's poorest regions in recent decades itself requires explanation. Increased economic insecurity, owing to deteriorating

[58] McKean (1992) stressed that benefits from the commons are frequently captured by the elite. Agarwal and Narain (1996) exposed the same phenomenon in their study of water management practices in a semi-arid village in the Gangetic plain.

[59] Recently de Soto (2000) has argued that the absence of well-defined property rights and their protection is the central fact of underdevelopment. Rightly, he stressed the inability of poor people to obtain credit because of a lack of collateral. In the text I am offering a multicausal explanation for poverty.

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institutions, is one identifiable cause: children yield a higher return in such circumstances than other forms of capital assets (Bledsoe 1994; Guyer 1994; Heyser 1996). This means that even if rapid population growth is a proximate cause of environmental destruction, the underlying cause would be expected to lie elsewhere. Thus when positive links are observed in the data between population growth, environmental degradation, and poverty, they should not be read to mean that one of them is the prior cause of the others. Over time, each could in turn be the cause of the others.[60]

The third reason is that management practices at the local level have been known on occasion to be overturned by central fiat. A number of states in the Sahel imposed rules that in effect destroyed communal management practices in the forests. Villages ceased to have the authority to enforce sanctions on those who violated locally instituted rules. There are now a number of enumerations of the ways in which State authority can damage local institutions and turn the local commons into open-access resources (Thomson et al. 1986; Somanathan 1991; Baland and Platteau 1996).

And the fourth reason is that the management of local commons often relies on social norms of behavior, which are founded on reciprocity. But institutions that are based on reciprocity are fragile. They are especially fragile in the face of growing opportunities for private investment in substitute resources (Dasgupta 1993, 2004 [2001]; Campbell et al. 2001). This is a case where an institution deteriorates even when there is no deterioration in external circumstances, nor population pressure. However, when traditional systems of management collapse and aren't replaced by institutions that can act as substitutes, the use of the local commons becomes unrestrained. The commons then deteriorate, leading to the proverbial "tragedy of the commons." In a recent study, Balasubramanian and Selvaraj (2003) have found that one of the oldest sources of irrigation – village tanks – have deteriorated over the years in a sample of villages in southern India, owing to a gradual decline in collective investment in their maintenance. The decline has come about because richer households have invested increasingly in private wells. Since poor households depend not only on tank water, but also on the fuelwood and fodder that grow round the tanks, the move to private wells on the part of richer households has accentuated the economic stress experienced by the poor.

History tells us that the local commons can be expected to decline in importance in tandem with economic development (North and Thomas 1973). Ensminger's (1990) study of the privatization of common grazing lands among the Orma in northeastern Kenya established that the transformation took place with the consent of the elders of the tribe.

[60] For the theory, see Dasgupta (1993, 2003); for a recent empirical study on South Africa that tests the theory, see Aggarwal et al. (2001).

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She attributed this to cheaper transportation and widening markets, making private ownership of land more profitable. The elders were from the stronger families, and it did not go unnoted by Ensminger that privatization accentuated inequality within the tribe.

The point is not to lament the decline of the commons, it is to identify those who are likely to get hurt by the transformation of economic regimes. That there are winners in the process of economic development is a truism. Much the harder task is to identify the likely losers and have policies in place that act as safety nets for them. This involves the analysis of facts, broadly construed, not values.

5.5.2 Inclusive wealth and sustainable development: application. The weakening of institutions that once managed the local commons is symptomatic of a wider social problem. Property rights to environmental resources are frequently unspecified or are unenforced even if they are specified, meaning that their market prices are all too often zero. So people have little incentive to economize on their use. But as environmental resources *in situ* are socially valuable, their shadow prices are positive (Section 3.3). Earlier we noted that one way to measure social well-being is to estimate inclusive wealth, where wealth includes the social value not only of manufactured capital assets and knowledge and skills, but also of environmental assets. We noted also that under certain circumstances the necessary and sufficient condition for social well-being to be sustainable is that inclusive wealth per head is a non-declining function of time. GNP is an inadequate measure of economic development because, among other things, it is impervious to the degradation of capital assets. Huge quantities of economic transactions are thereby absent from the measure. As it happens, the United Nations Development Program's Human Development Index (HDI) is also impervious to the degradation of capital assets. In this sense, HDI is no better than GNP per head as a measure of social well-being. There are many circumstances where a nation's GNP *per capita* would increase over a period of time and its HDI improve, even while inclusive wealth per head declines. In broad terms, the circumstances involve growing markets in certain classes of goods and services (e.g., petroleum products, transportation), concomitant with an absence of markets and collective policies for environmental goods and services (e.g., ecosystem services). This is why blanket proposals for free trade reflect faulty economics: the market mechanism can't be expected to function efficiently when markets for many environmental resources are simply missing.

Of course, a situation where GNP per head increases and the HDI improves, while inclusive wealth per head declines, cannot go on forever. An economy that eats into its productive base in order to raise current production cannot do so indefinitely. Eventually GNP per head and HDI

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would have to decline too, unless policies were to so change that inclusive wealth per head begins to accumulate. Using data published by the World Bank (Hamilton and Clemens 1999), Dasgupta (2004 [2001]) and Arrow et al. (2004) have shown that even while GNP per head and HDI have both increased in the Indian sub-continent over the past three decades, inclusive wealth per head has declined somewhat. The decline has occured because, relative to population growth, investments in manufactured capital, knowledge and skills, and improvements in institutions have not compensated for the degradation of natural capital. In sub-Saharan Africa both GNP per head and wealth *per capita* have declined, even while HDI has shown an improvement. The evidence also suggests that among the world's poorest regions, those that have experienced higher rates of population growth have also faired worse in terms of accumulation of inclusive wealth per head.

The findings are, however, very tentative, not only because the World Bank's estimates of shadow prices are most crude, but also because the circumstances in which inclusive wealth per head is an appropriate index of social well-being are restrictive, so that they are at best a first approximation to the world as we now know it. There is much that remains to be done to improve the way we go about identifying sustainable development. Nevertheless, they explain the puzzling cultural phenomenon noted earlier. Thus, when development activists (e.g., authors of the annual United Nations Development Program's *Human Development Report*) insist that development must be sustainable if it is to be viewed *as* development, they advertise welfare criteria (e.g., HDI) that have no bearing on the sustainability of development. It is an odd state of affairs.

5.6 Freedom and development

In a classic essay on social and political history, the late T.H. Marshall (1964) codified the modern concept of citizenship by identifying three social revolutions that took place sequentially in Western Europe: that of civil liberties in the eighteenth century, political liberties in the nineteenth, and socio-economic liberties in the twentieth.

Each type of liberty is valuable. But are they compatible, or are we faced with trade-offs among them?

Lipset (1959) famously observed that growth in GNP per head helps to promote democratic practice. The converse, that democratic practice and civil liberties promote material prosperity, had been suggested earlier, by Schumpeter (1942). Democracy and civil liberties, including the existence of a free press, have been seen not only as ends in themselves, some have seen them also as the means to economic progress. Understandably, rulers in the world's poorest countries have thought otherwise. That political and civil liberties on the one hand, and economic progress on the other,

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involve trade-offs when countries are poor has been the stated conviction of people in power in most of today's poorest countries.[61] However, in their pioneering empirical work on what they termed *social capability*, Adelman and Morris (1965, 1967) saw societal openness to discussions and ideas as a driver of economic progress. Their work had little impact on development economics. In view of the seeming indifference development activists have consistently shown to the lack of political and civil liberties in large parts of the poor world, most especially sub-Saharan Africa, one can but conclude that the presence of substantial trade-offs among the various categories of freedom was the unstated conviction among them, at least until the demise of the Soviet Union. "Food before freedom" was a slogan in frequent use among development activists until the 1990s.

In a crude statistical analysis of what in 1970 were the 51 countries with the lowest GNP *per capita*, Dasgupta (1990) found that, during the period 1970–1980, those nations whose citizens had enjoyed greater political and civil liberties had also on average performed better in terms of growth in GNP per head and improvements in life expectancy at birth. The correlation wasn't strong, but it was positive and significant.[62] Of course, correlation isn't causation, but the finding did imply that political and civil liberties are not luxuries in poor countries; they don't necessarily hinder economic progress. Subsequently, several more elaborate investigations, involving a larger sample of countries, were published. They included not only poor nations but rich nations too. The most elaborate among them was Barro (1996), who found that among those nations where freedom was highly restricted, there was a positive correlation between political and civil liberties on the one hand and growth in GNP per head on the other, but that among those where freedom was considerable, there was a negative correlation.[63] During the decade of the 1970s, the bulk of the worst offenders of restrictions in citizens' freedom were governments in the world's poorest countries, most of them in sub-Saharan Africa. Barro's findings were therefore consistent with those reported by Dasgupta.

That said, Barro's and Dasgupta's are only two empirical studies.[64] More importantly, neither author investigated whether, among poor

[61] For example, the statement, "Democracy and destitution do not go well together," was attributed to President Houphouet-Boigny of Cote d'Ivoire by President Omar Bongo of Gabon, in an interview reported in the *International Herald Tribune* (5 September 2000, sponsored section, p. 10).

[62] But Dasgupta (1990) found a *negative* relation between political and civil liberties on the one hand and improvements in literacy on the other.

[63] Political and civil liberties, even though they are distinct goods, are highly correlated in the contemporary world. See Taylor and Jodich (1983).

[64] Sen (1999) has notably observed that famines haven't occurred in democracies. In the text I am focusing not on extreme events, but on the prospects of escape from persistent ills like malnutrition. Although famines receive more attention in the press, malnutrition and

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countries, there was a positive link between political and civil liberties and increases in *inclusive wealth*, meaning that as matters stand, we don't know the links between democracy and economic progress in the contemporary world.[65] It is therefore as well to be circumspect about Sen's (1999) insistence that we regard development *as* freedom: the redeployment of terms does not illuminate what development really amounts to. Freedom is not a unitary commodity; rather, there are trade-offs among its various components. Since the components are many, Sen's appeal to the notion of a person's *capabilities* ("the alternative combinations of functionings that are feasible for her to achieve," Sen 1999: 75) as a way of repackaging freedom is also of no help. Human capabilities too involve trade-offs; and since Sen does not tell us how those trade-offs are to be valued, we are no more enlightened about the meaning of development than we were earlier. Nobody questions that freedom is a good thing; but, in any given context, there may be costs involved in extending any one component of freedom.[66]

So we return to matters of fact, broadly construed. Relatedly, empirical investigations into the possible links between, say, a crude measure of democracy and development in the form of gains in GNP per head would require that the criteria taken to be indicators of democratic practice and civil liberties, respectively, should be explicit and independent of GNP per head. The cross-country indices of civil and political liberties used by Dasgupta (2000) and Barro (1996), would appear to satisfy the requirement, because the way they were constructed bore little-to-no relation to economic activity (Dasgupta 1993: ch. 5*).

However, so far as I know, at levels of aggregation below that of the nation, there are no consistent sets of indices of democracy and civil liberties that are independent of material well-being. And yet, democratic practice and civic engagement could differ widely among regions within a country. Suppose we wish to inquire whether differences in the economic performance of the states or provinces in, say, India or China can be explained, at least in part, in terms of differences in the practice of local democracy. What should we look for? Problems are compounded because most of us *want* to believe that democracy is allied to the other things

disease are quantitatively of greater significance, because they are persistent and they involve far larger numbers of people.

[65] The sole (but very partial) exception is the valuable paper by Barrett and Graddy (2000), who, in a cross-country study, have shown that, controlling for income differences, urban air-borne pollutants and several water-borne pollutants are negatively and significantly correlated with the extent to which citizens enjoy political and civil liberties. People have greater voice in more open societies and that greater voice is able to translate itself into more effective political action.

[66] In his review of Sen (1999), Seabright (2001) enlarges on the question of when repackaging a concept makes that concept less problematic.

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that make life good. Empirical investigations are thus vulnerable to what econometricians call the "warm glow effect," meaning that we are tempted to read signs of democratic practice in precisely those societies that have prospered in other ways.[67]

For these reasons, scholars today find it difficult to resist claiming more than is uncovered when they study the links between democracy, civil liberties, and economic progress. For example, in a breathless passage on Sen (1999) on human capabilities, Kuper (2000: 663) refers to the instrumental value of democracy by saying that it has been "demonstrated repeatedly that nondemocratic regimes are in fact unfailingly detrimental to human rights and well-being."

If only the demonstration were in hand. Alas, it isn't. The evidence is fragmentary and often qualitative. Below the level of nations, the evidence mostly amounts to citing instances, occasionally dressed up in the form of case studies, that are especially vulnerable to the warm-glow effect. Counter-citings aren't hard to find. At the level of nations, India and China have been used repeatedly to settle one intellectual score or another.

5.7 Ethical complaints

But recent criticisms of GNP by development activists have been built on the language of morality.[68] Contemporary reports on poverty frequently proclaim that we economists have adopted the wrong ethical standards, that if we could only frame the prevailing state of affairs the right way, we would know what should be done to alleviate poverty. We are often encouraged to think that to re-name Poverty, or Development, is to explain why and how it occurs. I believe this is what attracts us to the voluminous debate on quality-of-life indices in academic publications and international development reports. The problem is that to describe is not the same as to explain. Moreover, as the subject of poverty raises passions, writers all too often end up assuming the moral high ground. Alternatives to GNP are proposed, preceded by such captions as "development with a human face," or "putting people first," or "humanizing economics," or prefaced by such solemn pronouncements as that "the poor should be regarded as agents, not patients," or that "freedom should be seen as a social commitment" – the suggestion being that those who do not preach morality when trying to uncover the social, political, and ecological processes that harbor poverty and destitution overlook the human race, or regard economic activity as having priority over human interests.

[67] Roemer (1999) makes a similar point about the temptations the political "left" yielded to in the 1960s and 1970s, to define "socialism" as the confluence of all good things.

[68] Since 1990 and until 2002, the shrillest have been the authors of the annual *Human Development Report* of the United Nations Development Program.

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Not surprisingly, academic expressions of moral superiority have not been substitutes for anything other than academic expressions of moral superiority. Moreover, the urge to moralize has led to a proliferation of "rights" (Nussbaum 2003; Putnam 2003). The problem is that when aspects of the human good are transformed, willy nilly, into rights, the very notion of rights is debased, its force weakened. The moral rhetoric can also backfire. Making good points with bad arguments can disguise the fact that there are good arguments which would have served the purpose. The following is an example of the kind of mistake one makes when attempting over-kill:

In giving expression to their moral outrage over the enormous inequality in today's world, the authors of UNDP (1998: 30) wrote: "New estimates show that the world"s 225 richest people have a combined wealth of over 1 trillion US dollars, equal to the annual income of the poorest 47 percent of the world's people (2.5 billion)."

But wealth is a stock, while income is a flow. As they differ in dimension, they cannot be compared. The stock has to be converted into an equivalent flow (or vice versa) before comparisons can be made. (The authors of UNDP 1999, repeated the mistake.) If we were to pursue UNDP's reasoning, we could follow the standard practice of converting wealth into a figure for permanent income by using a 5 percent annual interest rate; that is, to divide wealth by 20. When this conversion is made on the data, my calculations, albeit they are very crude, tell me that the world's richest 225 people, having a combined annual income of over US$50 billion, earn more than the combined annual incomes of people in the world's 12 poorest countries, or about 7 percent of the world's population (385 million). This is still a sobering statistic.

5.8 Differences over facts, not values

It isn't faulty ethics that has prevented modern economists from identifying sure-fire exits from poverty. After all, it is a concern with ethics that has prompted many of us to study the phenomenon in the first place. Alternative descriptions of poverty are easy enough to document, that the poor often don't enjoy food security, go hungry, don't own assets, are stunted and wasted, don't live long, can't read or write, are not empowered, can't insure themselves against crop failure or household calamity, don't have control over their own lives, live in unhealthy surroundings, and so forth. There is no surprise there: modern economic theory explains why they would all be expected to go together (see e.g., Dasgupta 1993).[69] What has proved to be really hard is uncovering the

[69] For confirmation that there are no surprises there, see the summary and discussion of the findings of a large-scale survey undertaken by the World Bank, in Narayan (2000). I need

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pathways that make people poor and keep them in poverty. In this paper I have tried to show that there have been many surprises along that inquiry.

If development policies advocated by modern economists have not infrequently failed, they have failed because of our vastly imperfect understanding of the way economic systems respond to policies, by which I mean the way households, firms, government agencies and other decision units respond to policies and the way ecosystems respond to the treatment meted out to them. And of course, in wholly dysfunctional political environments the problem of development may not lie in economics at all. To put the matter differently, at a deep level disagreements over the right means to further given ends have arisen more frequently in development economics than disputes over the nature of appropriate ends. To see explorations in ethical values as the corrective for the deficiencies of contemporary development economics is at best self-indulgence masquerading as moral sensitivity; at worst it is a distraction. We would, for example, have been far ahead in our understanding of the recent economic history of the world's poorest countries if development economists had taken Nature seriously.

It is hard to overstate the significance of the latter. Like human metabolic pathways (Section 5.3), ecological processes are overwhelmingly non-linear (see e.g., Steffen et al. 2004). Nevertheless, our intuition about development prospects have been formed mostly by linear analogies. Thus, when *The Independent* (1999, 4 December) says in its editorial that "economic growth is good for the environment, because countries need to put poverty behind them in order to care," or when *The Economist* (1999, 4 December: 17) writes that "trade improves the environment, because it raises incomes, and the richer people are, the more willing they are to devote resources to cleaning up their living space," they express the belief that environmental damages can always be undone if and when it is so desired. However, as we noted in our discussion of poverty traps (Section 5.3), pathways driven by non-linear processes are often irreversible. Unless note is taken of that fact, policies adopted in the name of development may well be that very development's undoing.[70]

All this is not to say that disputes over ends cannot, or do not, occur; it is only to say that even if differences in ends are the sources of the disputes, people soon enough bypass those sources and argue instead about history (for example, about which person or group committed which

hardly add at this point in the article that there is no acknowledgement in the publication that the findings confirmed what modern economists had predicted. This isn't to play down the usefulness of repeated confirmations of theoretical predictions. I merely protest against the way empirical findings confirming predictions of modern economic theory are thrown back at the theorists as showing evidence that they are ethically insensitive.

[70] For explorations into the implications of ecological non-linearities for economic policy, see Dasgupta (1982b, 2004 [2001]) and Dasgupta and Mäler (2004).

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atrocity, when) and about the ways in which social, political, and ecological processes work.

In their influential World Bank monograph on the incidence of undernourishment in poor countries, Reutlinger and Pellekaan (1986: 6) wrote:

> long run economic growth is often slowed by widespread chronic food insecurity. People who lack energy are ill-equipped to take advantage of opportunities for increasing their productivity and output. That is why policymakers in some countries may want to consider interventions that speed up food security for the groups worst affected without waiting for the general effect of long-run growth.

Then there are economists who advocate policies based upon an opposite causal mechanism, such as the one in World Bank (1986: 7):

> The best policies for alleviating malnutrition and poverty are those which increase growth and the competitiveness of the economy, for a growing and competitive economy facilitates a more even distribution of human capital and other assets and ensures higher incomes for the poor. Progress in the battle against malnutrition and poverty can be sustained if, and only if, there is satisfactory economic growth.

There doesn't appear to me to be a conflict in values in the quotations here. Rather, it reads as though there is disagreement over the most effective means for eliminating destitution. That the publications are from the same institution and from the same year should not cause surprise: we are all still woefully ignorant of the ways in which human societies and Nature respond to policies.

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