

Chapter 1

Poverty and Entitlements

1.1 ENTITLEMENTS AND OWNERSHIP

Starvation is the characteristic of some people not *having* enough food to eat. It is not the characteristic of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many *possible* causes. Whether and how starvation relates to food supply is a matter for factual investigation.

Food supply statements say things about a commodity (or a group of commodities) considered on its own. Starvation statements are about the *relationship* of persons to the commodity (or that commodity group).¹ Leaving out cases in which a person may deliberately starve, starvation statements translate readily into statements of ownership of food by persons. In order to understand starvation, it is, therefore, necessary to go into the structure of ownership.

Ownership relations are one kind of *entitlement* relations. It is necessary to understand the entitlement systems within which the problem of starvation is to be analysed.² This applies *more generally* to poverty as such, and *more specifically* to famines as well. An entitlement relation applied to ownership connects one set of ownerships to another through certain rules of legitimacy. It is a recursive relation and the process of connecting can be repeated. Consider a private ownership market economy. I own this loaf of bread. Why is this ownership accepted? Because I got it by exchange through paying some money I owned. Why is my ownership of that money accepted? Because I got it by selling a bamboo umbrella owned by me. Why is my ownership of the bamboo umbrella accepted? Because I made it with my own

¹ The contrast between commodities on the one hand and the relationship of commodities to persons on the other is central also to many other economic exercises. The evaluation of real national income is an important example, and for a departure from the traditional approaches to national income to a relationship-based evaluation in the light of this distinction, see Sen (1976b, 1979a).

² The 'entitlement approach' to starvation analysis was presented in Sen (1976c, 1977b), and is developed and extended in Chapter 5 and Appendix A, and applied to case studies in Chapters 6-9 below.

labour using some bamboo from my land. Why is my ownership of the land accepted? Because I inherited it from my father. Why is his ownership of that land accepted? And so on. Each link in this chain of entitlement relations 'legitimizes' one set of ownership by reference to another, or to some basic entitlement in the form of enjoying the fruits of one's own labour.³

Entitlement relations accepted in a private ownership market economy typically include the following, among others:

- (1) *trade-based entitlement*: one is entitled to own what one obtains by trading something one owns with a willing party (or, multilaterally, with a willing set of parties);
- (2) *production-based entitlement*: one is entitled to own what one gets by arranging production using one's owned resources, or resources hired from willing parties meeting the agreed conditions of trade;
- (3) *own-labour entitlement*: one is entitled to one's own labour power, and thus to the trade-based and production-based entitlements related to one's labour power;
- (4) *inheritance and transfer entitlement*: one is entitled to own what is willingly given to one by another who legitimately owns it, possibly to take effect after the latter's death (if so specified by him).

These are some entitlement relations of more or less straightforward kind, but there are others, frequently a good deal more complex. For example, one may be entitled to enjoy the fruits of some property without being able to trade it for anything else. Or one may be able to inherit the property of a deceased relation who did not bequeath it to anyone, through some rule of kinship-based inheritance accepted in the country in question. Or one may have some entitlements related to unclaimed objects on the basis of discovery. Market entitlements may even be supplemented by rationing or coupon systems, even in private ownership market economies, such as in Britain during the last war.⁴

³ The interpretation of entitlement relations here is descriptive rather than prescriptive. In contrast, Robert Nozick's (1974) well-known exploration of 'the entitlement theory' of justice is prescriptive, discussing private property rights and other rights in normative terms. The two exercises are thus differently motivated, and must not be confused with each other.

⁴ This may or may not be combined with price 'control', and that in its turn may or may not be combined with a flourishing 'black market'; see Dasgupta (1950) for an illuminating analysis of black market prices.

The scope of ownership relations can vary greatly with economic systems. A socialist economy may not permit private ownership of 'means of production', thereby rendering 'production-based entitlements' inoperative except when it involves just one's own labour and some elementary tools and raw materials. A capitalist economy will not only *permit* the private ownership of means of production; that is indeed one of its main *foundations*. On the other hand, a capitalist economy—like a socialist one—will not permit ownership of one human being by another, as a slave economy will. A socialist economy may restrict the employment of one person by another for production purposes, i.e. constrain the possibility of private trading of labour power for productive use. A capitalist economy will not, of course, do this, but may impose restrictions on binding contracts involving labour-power obligations over long periods of time. This, however, is the standard system under some feudal practices involving bonded labour, and also in some cases of colonial plantations.

1.2 EXCHANGE ENTITLEMENT

In a market economy, a person can exchange what he owns for another collection of commodities. He can do this exchange either through trading, or through production, or through a combination of the two. The set of all the alternative bundles of commodities that he can acquire in exchange for what he owns may be called the 'exchange entitlement' of what he owns.

The 'exchange entitlement mapping' is the relation that specifies the set of exchange entitlements for each ownership bundle. This relation—E-mapping for brevity—defines the possibilities that would be open to him corresponding to each ownership situation. A person will be exposed to starvation if, for the ownership that he actually has, the exchange entitlement set does not contain any feasible bundle including enough food. Given the E-mapping, it is in this way possible to identify those ownership bundles—call them collectively the starvation set—that must, thus, lead to starvation in the absence of non-entitlement transfers (e.g. charity). E-mappings, starvation sets, and related concepts are discussed in Chapter 5 and are formally analysed in Appendix A, and here we are concerned only with the underlying ideas.

Among the influences that determine a person's exchange

entitlement, given his ownership bundle (including labour power), are the following:

- (1) whether he can find an employment, and if so for how long and at what wage rate;
- (2) what he can earn by selling his non-labour assets, and how much it costs him to buy whatever he may wish to buy;
- (3) what he can produce with his own labour power and resources (or resource services) he can buy and manage;
- (4) the cost of purchasing resources (or resource services) and the value of the products he can sell;
- (5) the social security benefits he is entitled to and the taxes, etc., he must pay.

A person's ability to avoid starvation will depend both on his ownership and on the exchange entitlement mapping that he faces. A general decline in food supply may indeed cause him to be exposed to hunger through a rise in food prices with an unfavourable impact on his exchange entitlement. Even when his starvation is *caused* by food shortage in this way, his immediate reason for starvation will be the decline in his exchange entitlement.

More importantly, his exchange entitlement may worsen for reasons other than a general decline of food supply. For example, given the same total food supply, other groups' becoming richer and buying more food can lead to a rise in food prices, causing a worsening of exchange entitlement. Or some economic change may affect his employment possibilities, leading also to worse exchange entitlement. Similarly, his wages can fall behind prices. Or the price of necessary resources for the production he engages in can go up relatively. These diverse influences on exchange entitlements are as relevant as the overall volume of food supply *vis-à-vis* population.

1.3 MODES OF PRODUCTION

The exchange entitlements faced by a person depend, naturally, on his position in the economic class structure as well as the modes of production in the economy. What he owns will vary with his class, and even if exactly the same E-mapping were to hold for all, the actual exchange entitlements would differ with his ownership position.

But even with the same ownership position, the exchange

entitlements will be different depending on what economic prospects are open to him, and that will depend on the modes of production and his position in terms of production relations.⁵ For example, while a peasant differs from a landless labourer in terms of ownership (since he owns land, which the labourer does not), the landless share-cropper differs from the landless labourer not in their respective ownerships, but in the way they can use the only resource they own, viz. labour power. The landless labourer will be employed in exchange for a wage, while the share-cropper will do the cultivation and own a part of the *product*.

This difference can lead not merely to contrasts of the levels of typical remuneration of the two, which may or may not be very divergent, but also to sharp differences in exchange entitlements in distress situations. For example, a cyclone reducing the labour requirement for cultivation by destroying a part of the crop in each farm may cause some casual agricultural labourers to be simply fired, leading to a collapse of their exchange entitlements, while others are retained. In contrast, in this case the share-croppers may all operate with a lower labour input and lower entitlement, but no one may become fully jobless and thus incomeless.

Similarly, if the output is food, e.g. rice or wheat, the share-cropper gets his return in a form such that he can directly eat it without going through the vagaries of the market. In contrast, the agricultural labourer paid in money terms will have to depend on the exchange entitlement of his money wage. When famines are accompanied by sharp changes in relative prices—and in particular a sharp rise in food prices—there is much comparative merit in being a share-cropper rather than an agricultural labourer, especially when the capital market is highly imperfect. The greater production risk of the share-cropper compared with the security of a fixed wage on the part of the agricultural labourer has been well analysed (see, for example, Sugiitz, 1974); but a fixed money wage may offer no security at all in a situation of sharply varying food prices (even when employment is guaranteed). In contrast, a share of the food output does have some security advantage in terms of exchange entitlement.

⁵ See Marx (1857–8, 1867) for the classic treatment of modes of production and their relevance to production and distribution.

Similarly, those who sell services (e.g. barbers or rickshaw-pullers) or handicraft products (e.g. weavers or shoemakers) are—like wage labourers—more exposed, in this respect, to famines involving unexpected rises of food prices than are peasants or share-croppers producing food crops. This is the case even when the *typical* standard of living of the latter is no higher than that of the former.

In understanding general poverty, or regular starvation, or outbreaks of famines, it is necessary to look at both ownership patterns and exchange entitlements, and at the forces that lie behind them. This requires careful consideration of the nature of modes of production and the structure of economic classes as well as their interrelations. Later in the monograph, when actual famines are analysed, these issues will emerge more concretely.

1.4 SOCIAL SECURITY AND EMPLOYMENT ENTITLEMENTS

The exchange entitlements depend not merely on market exchanges but also on those exchanges, if any, that the state provides as a part of its social security programme. Given a social security system, an unemployed person may get 'relief', an old person a pension, and the poor some specified 'benefits'. These affect the commodity bundles over which a person can have command. They are parts of a person's exchange entitlements, and are conditional on the absence of other exchanges that a person might undertake. For example, a person is not entitled to unemployment benefit if he exchanges his labour power for a wage, i.e. becomes employed. Similarly, exchanges that make a person go above the specified poverty norm will make him ineligible for receiving the appropriate relief. These social security provisions are essentially supplementations of the processes of market exchange and production, and the two types of opportunities together determine a person's exchange entitlements in a private ownership market economy with social security provisions.

The social security arrangements are particularly important in the context of starvation. The reason why there are no famines in the rich developed countries is not because people are generally rich on the average. Rich they certainly are when they have jobs and earn a proper wage; but for large numbers of people this condition fails to hold for long periods of time, and the exchange

entitlements of their endowments in the absence of social security arrangements could provide very meagre commodity bundles indeed. With the proportion of unemployment as high as it is, say, in Britain or America today, but for the social security arrangements there would be widespread starvation and possibly a famine. What prevents that is not the high average income or wealth of the British or the general opulence of the Americans, but the guaranteed minimum values of exchange entitlements owing to the social security system.

Similarly, the elimination of starvation in socialist economies—for example in China—seems to have taken place even without a dramatic rise in food availability per head, and indeed, typically the former has *preceded* the latter. The end of starvation reflects a shift in the entitlement system, both in the form of social security and—more importantly—through systems of guaranteed employment at wages that provide exchange entitlement adequate to avoid starvation.

1.5 FOOD SUPPLY AND STARVATION

There has been a good deal of discussion recently about the prospect of food supply falling significantly behind the world population. There is, however, little empirical support for such a diagnosis of recent trends. Indeed, for most areas in the world—with the exception of parts of Africa—the increase in food supply has been comparable to, or faster than, the expansion of population.⁶ But this does not indicate that starvation is being systematically eliminated, since starvation—as discussed—is a function of entitlements and not of food availability as such. Indeed, some of the worst famines have taken place with no significant decline in food availability per head (see Chapters 6, 7, and 9).

To say that starvation depends 'not merely' on food supply but also on its 'distribution' would be correct enough, though not remarkably helpful. The important question then would be: what determines distribution of food between different sections of the community? The entitlement approach directs one to questions dealing with ownership patterns and—less obviously

⁶ See Aziz (1975), Sinha (1976a, 1976b, 1977), Sinha and Gordon Drabek (1978), Interfutures (1979), and also the *FAO Production Yearbooks* and *FAO Monthly Bulletins* (e.g., vol. 3, No. 4, 1980, pp. 15–16). See also chapters 5 and 10 below.

but no less importantly—to the various influences that affect exchange entitlement mappings (see Appendices A and B, and Chapters 5–10). In so far as food supply itself has any influence on the prevalence of starvation, that influence is seen as working *through* the entitlement relations. If one person in eight starves regularly in the world,⁷ this is seen as the result of his inability to establish entitlement to enough food; the question of the physical availability of the food is not directly involved.

The approach of entitlements used in this work is very general and—I would argue—quite inescapable in analysing starvation and poverty. If, nevertheless, it appears odd and unusual, this can be because of the hold of the tradition of thinking in terms of what *exists* rather than in terms of who can *command* what. The mesmerizing simplicity of focusing on the ratio of food to population has persistently played an obscuring role over centuries, and continues to plague policy discussions today much as it has deranged anti-famine policies in the past.⁸

Chapter 2

Concepts of Poverty

2.1 REQUIREMENTS OF A CONCEPT OF POVERTY

On his deathbed in Calcutta, J. B. S. Haldane wrote a poem called 'Cancer's a funny thing'.¹ Poverty is no less funny. Consider the following view of poverty:

People must not be allowed to become so poor that they offend or are hurtful to society. It is not so much the misery and plight of the poor but the discomfort and cost to the community which is crucial to this view of poverty. We have a problem of poverty to the extent that low income creates problems for those who are not poor.²

To live in poverty may be sad, but to 'offend or [be] hurtful to society', creating 'problems for those who are not poor' is, it would appear, the real tragedy. It isn't easy to push much further the reduction of human beings into 'means'.

The first requirement of the concept of poverty is of a criterion as to *who* should be the focus of our concern. The specification of certain 'consumption norms', or of a 'poverty line', may do part of the job: 'the poor' are those people whose consumption standards fall short of the norms, or whose incomes lie below that line. But this leads to a further question: is the concept of poverty to be related to the interests of: (1) only the poor, (2) only the non-poor, or (3) both the poor and the non-poor?

It seems a bit grotesque to hold that the concept of poverty should be concerned only with the non-poor, and I take the liberty of dropping (2)—and the 'view' quoted in the first paragraph—without further ado. Alternative (3) might, however, appear to be appealing, since it is broad-based and non-restrictive. There is little doubt that the penury of the poor does, in fact, affect the well-being of the rich. The real question is whether such effects should enter into the concept of poverty as

¹ *Oxford Book of 20th Century English Verse*, ed. P. Larkin, Oxford, 1973, p. 271.

² Rein (1971), p. 46. I hasten to add that here Professor Rein is describing one of the broad concepts of poverty, viz. (1) 'subsistence', (2) 'inequality', and (3) 'externality'; the view quoted corresponds to 'externality'.

⁷ See Aziz (1975), pp. 108 and 123.

⁸ See Chapters 6, 7, 9 and 10.

such, or whether they should figure under the possible *effects* of poverty. I believe a good case can be made for choosing the latter alternative, since in an obvious sense poverty must be a characteristic of the poor rather than of the non-poor. One can, for instance, argue that, if one considers a case of reduction of real income and increase in the suffering of all the poor, it *must* be described as an increase of poverty, no matter whether this change is accompanied by a reduction in the adverse effects on the rich (e.g. whether the rich are less 'offended' by the sight of penury).

This conception of poverty based on (1) does not, of course, imply any denial of the fact that the suffering of the poor themselves may depend on the condition of the non-poor. It merely asserts that the focus of the concept of poverty has to be on the well-being of the poor as such, no matter what influences affect their well-being. *Causation* of poverty and *effects* of poverty will be important issues to study on their own rights, and the conceptualization of poverty in terms of the conditions only of the poor does not affect the worthwhileness of studying these questions. Indeed, there will be much to say on these questions later on in the book.

It is perhaps worth mentioning in this context that in some discussions one is concerned not with the prevalence of poverty in a country in the form of the suffering of the poor, but with the relative opulence of the nation as a whole.³ In those discussions it will, of course, be entirely legitimate to be concerned with the well-being of all the people in the nation, and the description of a nation as 'poor' must obviously relate to such a broader concept. These are *different* exercises, and so long as this fact is clearly recognized there need not be any confusion.

Even after we have identified the poor and specified that the concept of poverty is concerned with the conditions of the poor, much remains to be done. There is the problem of aggregation—often important—over the group of the poor, and this involves moving from the description of the poor to some over-all measure of 'poverty' as such. In some traditions, this is done very simply by just counting the number of the poor, and then expressing poverty as the ratio of the number of the poor to the total number of people in the community in question.

³ See, for example, Paul Streeten, 'How Poor Are the Poor Countries and Why?' in

This 'head-count measure'—*H* for short—has at least two serious drawbacks. First, *H* takes no account of the *extent* of the short-fall of incomes of the poor from the 'poverty line': a reduction in the incomes of all the poor without affecting the incomes of the rich will leave this head count measure completely unchanged. Second, it is insensitive to the distribution of income among the poor; in particular, no transfer of income from a poor person to one who is richer can increase this head count measure. Both these defects make the measure *H*, which is by far the most widely used measure, quite unacceptable as an indicator of poverty, and the conception of poverty that lies implicit in it seems eminently questionable.

In this chapter I am not concerned with problems of measurement as such, which will be taken up in the next two chapters and in Appendix C. But behind each measure lies an analytical concept, and here I am concerned with the general ideas on the conception of poverty. If the preceding argument is tight, then the requirements of a concept of poverty must include two distinct—but not unrelated—exercises, namely (1) a method of identifying a group of people as poor ('identification'); and (2) a method of aggregating the characteristics of the set of poor people into an over-all image of poverty ('aggregation'). Both these exercises will be performed in the next two chapters, but before that we need to study the kinds of considerations that may be used in choosing the operations (both identification and aggregation). The rest of the chapter will be concerned with these issues.

The underlying considerations come out most sharply in the alternative approaches to the concept of poverty that one can find in the literature. Some of these approaches have been subjected to severe attacks recently, while others have not been examined sufficiently critically. In attempting an evaluation of these approaches in the following sections, I shall try to assess the approaches as well as their respective critiques.

THE BIOLOGICAL APPROACH

This famous study of poverty in York, Seebom Rowntree (1901) defined families as being in 'primary poverty' if their 'total earnings are insufficient to obtain the minimum necessities for the maintenance of merely physical efficiency'. It is not surprising that biological considerations related to the requirements of

survival or work efficiency have been often used in defining the poverty line. Starvation, clearly, is the most telling aspect of poverty.

The biological approach has come under rather intense fire recently.⁴ There are indeed several problems with its use. First, there are significant variations related to physical features, climatic conditions and work habits.⁵ In fact, even for a specific group in a specific region, nutritional requirements are difficult to define precisely. People have been known to survive with incredibly little nutrition, and there seems to be a cumulative improvement of life expectation as the dietary limits are raised. In fact, physical opulence seems to go on increasing with nutrition over a very wide range; Americans, Europeans and Japanese have been growing measurably in stature as their diets have continued to improve. There is difficulty in drawing a line somewhere, and the so-called 'minimum nutritional requirements' have an inherent arbitrariness that goes well beyond variations between groups and regions.

Second, the translation of minimum *nutritional* requirements into minimum *food* requirements depends on the choice of commodities. While it may be easy to solve the programming exercise of a 'diet problem', choosing a minimum cost diet for meeting specified nutritional requirements from food items sold at specified costs, the relevance of such a minimum cost diet is not clear. Typically, it turns out to be very low-cost indeed,⁶ but monumentally boring, and people's food habits are not, in fact, determined by such a cost minimization exercise. The actual incomes at which specified nutritional requirements are met will depend greatly on the consumption habits of the people in question.

Third, for non-food items such minimum requirements are not easy to specify, and the problem is usually solved by assuming that a specified proportion of total income will be spent on food. With this assumption, the minimum food costs can be used to derive minimum income requirements. But the proportion spent on food varies not merely with habits and culture, but also with relative prices and availability of goods and services. It is not

⁴ See, for example, Townsend (1971, 1974) and Rein (1971).

⁵ See Rein (1971), Townsend (1974), Sukhatme (1977, 1978), and Srinivasan (1977a, 1979).

⁶ See, for example, Stigler's (1945) astonishing estimates of 'the cost of subsistence'. See also Rajaraman (1974).

surprising that the assumptions made often turn out to be contradicted by actual experience; for example, Lord Beveridge's estimate of subsistence requirements of income during the Second World War proved to be far from correct, since the British were spending a much lower proportion of their income on food than was assumed (see Townsend, 1974, p. 17).

In view of these problems, one may well agree with Martin Rein's (1971) assertion that 'almost every procedure in the subsistence-level definition of poverty can be reasonably challenged' (p. 61). But the question that does remain is this: after we have challenged every one of the procedures used under the biological approach, what do we do *then*? Do we simply ignore that approach,⁷ or do we examine whether something remains in it to be salvaged? I would argue that there does remain something.

First, while the concept of nutritional requirements is a rather loose one, there is no particular reason to suppose that the concept of poverty must itself be clear-cut and sharp. In fact, a certain amount of vagueness is implicit in both the concepts, and the really interesting question is the extent to which the areas of vagueness of the two notions, as commonly interpreted, tend to coincide. The issue, thus, is not whether nutritional standards are vague, but whether the vagueness is of the required kind.

Second, to check whether someone is getting a specified bundle of nutrition, one need not necessarily go through the procedure of examining whether that person has the income level that would generate that bundle. One can simply examine whether the person is, in fact, meeting that nutritional requirement or not. Even in poor countries, direct nutritional information of this type can be collected through sample surveys of consumption bundles and can be extensively analysed (see, for example, Srinivasan and Bardhan, 1974, especially the paper by Chatterjee, Sarkar and Paul, and Panikar *et al.*, 1975); and the 'identification' exercise under the nutritional approach need not go through the intermediary of income at all.

Much depends on what the alternatives are. Rein (1971) himself recommends that such concepts 'deserve more attention and developments' (p. 62). Since 'subsistence' is one of his three 'broad concepts' of poverty, we are left with 'externality' and 'inequality'. Inequality—though related to poverty in terms of both causation and evaluation—is, however, a *distinct* issue from poverty, as will be presently argued (see Section 2.3). 'Externality', in terms of the effects of poverty on the *non-poor*, is an approach that we have already discussed (in Section 2.1), critically.

Third, even when we do go through the intermediary of income, the translation of a set of nutritional norms (or alternative sets of such norms) into a 'poverty line' income (or poverty-line *incomes*) may be substantially simplified by the wide prevalence of particular patterns of consumption behaviour in the community in question. Proximity of *actual* habits and behaviour makes it possible to derive income levels at which the nutritional norms will be 'typically' met. (This question is discussed further in Chapter 3.)

Finally, while it can hardly be denied that malnutrition captures only one aspect of our idea of poverty, it is an important aspect, and one that is particularly important for many developing countries. It seems clear that malnutrition must have a central place in the conception of poverty. How exactly this place is to be specified remains to be explored, but the recent tendency to dismiss the whole approach seems to be a robust example of misplaced sophistication.

2.3 THE INEQUALITY APPROACH

The idea that the concept of poverty is essentially one of inequality has some immediate plausibility. After all, transfers from the rich to the poor can make a substantial dent on poverty in most societies. Even the poverty line to be used for identifying the poor has to be drawn with respect to contemporary standards in the community in question, so that poverty may look very like inequality between the poorest group and the rest of the community.

Arguments in favour of viewing poverty as inequality are presented powerfully by Miller and Roby, who conclude:

Casting the issues of poverty in terms of stratification leads to regarding poverty as an issue of inequality. In this approach, we move away from efforts to measure poverty lines with pseudo-scientific accuracy. Instead, we look at the nature and size of the differences between the bottom 20 or 10 per cent and the rest of the society. Our concern becomes one of narrowing the differences between those at the bottom and the better-off in each stratification dimension.⁸

There is clearly quite a bit to be said in favour of this approach. But one can argue that inequality is fundamentally a different

⁸ Miller and Roby (1971, p. 143). Also Miller, Rein, Roby and Cross (1967). See Wedderburn (1974) for discussions of alternative approaches.

issue from poverty. To try to analyse poverty 'as an issue of inequality', or the other way round, would do little justice to either. Inequality and poverty are not, of course, unrelated. But neither concept subsumes the other. A transfer of income from a person in the top income group to one in the middle income range must *ceteris paribus* reduce inequality; but it may leave the perception of poverty quite unaffected. Similarly, a general decline in income that keeps the chosen measure of inequality unchanged may, in fact, lead to a sharp increase in starvation, malnutrition and obvious hardship; it will then be fantastic to claim that poverty is unchanged. To ignore such information as starvation and hunger is not, in fact, an abstinence from 'pseudo-scientific accuracy', but blindness to important parameters of the common understanding of poverty. Neither poverty nor inequality can really be included in the empire of the other.⁹

It is, of course, quite a different matter to recognize that inequality and poverty are *associated* with each other, and to note that a different distribution system may cure poverty even without an expansion of the country's productive capabilities. Recognizing the distinct nature of poverty as a concept permits one to treat it as a matter of interest and involvement in itself. The role of inequality in the prevalence of poverty can then figure in the analysis of poverty without making the two conceptually equivalent.

2.4 RELATIVE DEPRIVATION

The concept of 'relative deprivation' has been fruitfully used in the analysis of poverty,¹⁰ especially in the sociological literature. Being poor has clearly much to do with being deprived, and it is natural that, for a social animal, the concept of deprivation will be a relative one. But within the uniformity of the term 'relative deprivation', there seem to exist some distinct and different notions.

One distinction concerns the contrast between 'feelings of

⁹ It is also worth noting that there are many measures of inequality, of which the gap between the bottom 20 or 10 per cent and the rest' is only one. See Atkinson (1970), Sen (1972a), Kolm (1976a, 1976b), and Blackorby and Donaldson (1978, 1980b). Also, inequality is not just a matter of the *size distribution* of income but one of investigating disparities between different sections of the community from many different perspectives, in terms of *relations of production*, as done by Marx (1859, 1867).

¹⁰ See Runciman (1966) and Townsend (1971), presenting two rather different approaches to the concept.

deprivation' and 'conditions of deprivation'. Peter Townsend has argued that 'the latter would be a better usage'.¹¹ There is indeed much to be said for a set of criteria that can be based on concrete conditions, so that one could use 'relative deprivation' 'in an objective sense to describe situations where people possess less of some desired attribute, be it income, favourable employment conditions or power, than do others'.¹²

On the other hand, the choice of 'conditions of deprivation' can not be independent of 'feelings of deprivation'. Material objects cannot be evaluated in this context without reference to how people view them, and even if 'feelings' are not brought in explicitly, they must have an implicit role in the selection of 'attributes'. Townsend has rightly emphasized the importance of the 'endeavour to define the style of living which is generally shared or approved in each society and find whether there is . . . a point in the scale of the distribution of resources below which families find it increasingly difficult . . . to share in the customs, activities and diets comprising that style of living'.¹³ One must, however, look also at the feelings of deprivation in deciding on the style and level of living the failure to share which is regarded as important. The dissociation of 'conditions' from 'feelings' is, therefore, not easy, and an objective diagnosis of 'conditions' requires an objective understanding of 'feelings'.

A second contrast concerns the choice of 'reference groups' for comparison. Again, one has to look at the groups with which the people in question actually compare themselves, and this can be one of the most difficult aspects of the study of poverty based on relative deprivation. The horizon of comparison is not, of course, independent of political activity in the community in question, since one's sense of deprivation is closely related to one's expectations as well as one's view of what is fair and who has the right to enjoy what.

These different issues related to the general notion of relative deprivation have considerable bearing on the social analysis of

¹¹ Townsend (1974), pp. 25-6.

¹² Wedderburn (1974), p. 4.

¹³ Townsend (1974), p. 36.

¹⁴ For example, Richard Scase (1974) notes that Swedish workers tend to choose rather wider reference groups than British workers, and relates this contrast to the differences in the nature of the two trade union movements and of political organization generally.

poverty. It is, however, worth noting that the approach of relative deprivation—even including all its variants—cannot really be the *only* basis for the concept of poverty. A famine, for example, will be readily accepted as a case of acute poverty no matter what the relative pattern within the society happens to be. Indeed, there is an irreducible core of *absolute* deprivation in our idea of poverty, which translates reports of starvation, malnutrition and visible hardship into a diagnosis of poverty without having to ascertain first the relative picture. Thus the approach of relative deprivation supplements rather than supplants the analysis of poverty in terms of absolute dispossession.

2.5 A VALUE JUDGEMENT?

The view that 'poverty is a value judgement' has recently been presented forcefully by many authors. It seems natural to think of poverty as something that is disapproved of, the elimination of which is regarded as morally good. Going further, it has been argued by Mollie Orshansky, an outstanding authority in the field, that 'poverty, like beauty, lies in the eye of the beholder'.¹⁵ The exercise would, then, seem to be primarily a subjective one: unclashing one's personal morals on the statistics of deprivation. It would like to argue against this approach. It is important to distinguish between different ways in which the role of morals can be accommodated into the exercise of poverty measurement. There is a difference between saying that the exercise *is itself* a prescriptive one and saying that the exercise must *take note* of the prescriptions made by members of the community. To describe a prevailing prescription is an act of description, not prescription. It may indeed be the case that poverty, as Eric Hobsbawm (1968) thought it, 'is always defined according to the conventions of the society in which it occurs' (p. 398). But this does not make the exercise of poverty assessment in a given society a value judgement. Nor a subjective exercise of some kind or other. For the person studying and measuring poverty, the conventions of society are matters of fact (what *are* the contemporary standards?), and not issues of morality or of subjective search (what *should* be the contemporary standards? what *should* be my values? how do I *feel* about all this?).¹⁶

¹⁵ Orshansky (1969), p. 37. For a critique of this position, see Townsend (1974). This does not, of course, in any way deny that one's values may implicitly affect one's

The point was brought out very clearly by Adam Smith more than two hundred years ago:

By necessities I understand not only the commodities which are indispensably necessary for the support of life, but what ever the custom of the country renders it indecent for creditable people, even the lowest order, to be without. A linen shirt, for example, is, strictly speaking, not a necessary of life. The Greeks and Romans lived, I suppose, very comfortably though they had no linen. But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty which it is presumed, nobody can well fall into without extreme bad conduct. Custom, in the same manner, has rendered leather shoes a necessary of life in England. The poorest creditable person of either sex would be ashamed to appear in public without them.¹⁷

In a similar vein Karl Marx (1867) argued that, while 'a historical and moral element' enters the concept of subsistence, 'nevertheless, in a given country, at a given period, the average quantity of the means of subsistence necessary for the labourer is practically known' (p. 150).

It is possible that Smith or Marx may have overestimated the extent of uniformity of views that tends to exist in a community on the content of 'subsistence' or 'poverty'. Description of 'necessities' may be very far from ambiguous. But the presence of ambiguity in a description does not make it a prescriptive act—only one of ambiguous description. One may be forced to be arbitrary in eliminating the ambiguity, and if so that arbitrariness would be worth recording. Similarly, one may be forced to use more than one criteria because of non-uniformity of accepted standards, and to look at the *partial* ordering generated by the criteria taken together (reflecting 'dominance' in terms of all the criteria).¹⁸ But the partial ordering would still reflect a descriptive

assessment of facts, as indeed they very often do. The statement is about the *nature* of the exercise, viz. that it is concerned with assessment of facts, and not about the way it is typically performed and the psychology that lies behind that performance. (The doctor attached to the students' hostel in which I stayed in Calcutta would refuse to diagnose influenza on the powerful ground that 'flu shouldn't be a reason for staying in bed'.) The issue is, in some respects, comparable to that of one's interests influencing one's values; an important historical analysis of various different aspects of that relationship, see Hirschman (1977).

¹⁷ Smith (1776), pp. 351–2.

¹⁸ Sen (1973a), Chapters 2 and 3.

ive statement rather than a prescriptive one. Indeed, the statement would be rather like saying, 'Nureyev may or may not be a better dancer than Nijinsky, but he dances better than this author, according to contemporary standards', a descriptive statement (and sadly non-controversial).

2.6 A POLICY DEFINITION?

A related issue is worth exploring in this context. The measurement of poverty may be based on certain given standards, but what kind of statements do these standards themselves make? Are they standards of public policy, reflecting either the objectives of actual policy or views on what the policy should be? There is little doubt that the standards must have a good deal to do with some broad notions of acceptability, but that is not the same thing as reflecting precise policy objectives—actual or recommended. On this subject too a certain amount of confusion seems to exist. For example, the United States President's Commission on Income Maintenance (1969) argued thus for such a 'policy definition' in its well-known report, *Poverty amid Plenty*:

If society believes that people should not be permitted to die of starvation or exposure, then it will define poverty as the lack of minimum food and shelter necessary to maintain life. If society feels some responsibility for providing to all persons an established measure of well-being beyond mere existence, for example, good physical health, then it will add to its list of necessities the resources required to prevent or cure sickness. At any given time a policy definition reflects a balancing of community capabilities and desires. In low income societies the community finds it impossible to worry much beyond physical survival. Other societies, more able to support their dependent members, begin to consider the effects that pauperism will have on the poor and non-poor alike.¹⁹

There are at least two difficulties with this 'policy definition'. First, practical policy-making depends on a number of influences, going beyond the prevalent notions of what should be done. Policy is a function of political organization, and depends on a variety of factors including the nature of the government, sources of its power, and the forces exerted by other organizations. In the public policies pursued in many countries, in fact, hard to detect a concern with the elimination of starvation in any obvious sense. If interpreted in terms of actual US President's Commission on Income Maintenance (1969), p. 8.

policy, the 'policy definition' may fail to catch the political issues in policy-making.

Second, even if 'policy' is taken to stand not for actual public policy, but for policy recommendations widely held in the society in question, there are problems. There is clearly a difference between the notion of 'deprivation' and the idea of what should be eliminated by 'policy'. For one thing, policy recommendations must depend on an assessment of feasibilities ('ought implies can'²⁰), but to concede that some deprivations cannot be immediately eliminated is not the same thing as conceding that they must not currently be seen as deprivations. (Contrast: 'Look here, old man, you aren't really poor even though you are starving, since it is impossible in the present economic circumstances to maintain the income of everyone above the level needed to eliminate starvation.') Adam Smith's notion of subsistence based on 'the commodities which are indispensably necessary for the support of life' and 'what ever the custom of the country renders it indecent' for someone 'to be without' is by no means identical with what is generally accepted as could and should be provided to all as a matter of policy. If in a country suddenly impoverished, say, by war it is agreed generally that the income maintenance programme must be cut down to a lower level of income, would it be right to say that the country does not have any greater poverty since a reduction of incomes has been *matched* by a reduction of the poverty line?

I would submit that the 'policy definition' is based on a fundamental confusion. It is certainly true that with economic development there are changes in the notion of what counts as deprivation and poverty, and there are changes also in the ideas as to what should be done. But while these two types of changes are interdependent and also intertemporally correlated with each other, neither can be *defined* entirely in terms of the other. Oil-rich Kuwait may be 'more able to support their dependent citizens' with its new prosperity, but the notion of what is poverty may not go up immediately to the corresponding level. Similarly, the war-devastated Netherlands may keep up its standard of what counts as poverty and not scale it down to the level commensurate with its predicament.²¹

²⁰ Cf. Hare (1963), Chapter 4.

²¹ For an account of that predicament, see Stein, Susser, Saenger, and Marolla (1975).

If this approach is accepted, then the measurement of poverty must be seen as an exercise of description assessing the predicament of people in terms of the prevailing standards of necessities. It is primarily a factual rather than an ethical exercise, and the facts relate to what is regarded as deprivation, and not directly to what policies are recommended. The deprivation in question has both absolute and relative aspects (as argued in Sections 2.2 and 2.4 above).

2.7. STANDARDS AND AGGREGATION

This still leaves two issues quite untouched. First, in comparing the poverty of two societies, how can a common standard of necessities be found, since such standards would vary from society to society? There are actually two quite distinct types of exercises in such inter-community comparisons. One is aimed at comparing the extent of deprivation in each community in relation to their respective standards of minimum necessities, and the other is concerned with comparing the predicament of the two communities in terms of some given minimum standard, e.g. that prevalent in one community. There is, indeed, nothing contradictory in asserting both of the following pair of statements:

(1) There is *less* deprivation in community A than in community B in terms of some *common* standard, e.g. the notions of minimum needs prevailing in community A.

(2) There is *more* deprivation in community A than in community B in terms of their *respective* standards of minimum needs, which are a good deal higher in A than in B.²²

It is rather pointless to dispute which of these two senses is the correct one, since it is quite clear that both types of questions are of interest. The important thing to note is that the two questions are quite distinct from each other.

Second, while the exercise of 'identification' of the poor can be based on a standard of minimum needs, that of 'aggregation' requires some method of combining deprivations of different people into some overall indicator. In the latter exercise some *relative* scaling of deprivations is necessary. The scope for

There is also no necessary contradiction in asserting that community A has less deprivation in terms of one community's standards (e.g. A's itself), while community B is deprived in terms of another community's standards (e.g. B's).

arbitrariness in this is much greater, since conventions on this are less firmly established and the constraints of acceptability would tend to leave one with a good deal of freedom. The problem is somewhat comparable with the criteria for making *aggregate descriptive statements* in such fields as, say, comparisons of sporting achievements of different groups. While it is clear that certain circumstances would permit one to make an aggregate statement like 'Africans are better at sprint than Indians' (e.g. the circumstance in which the former group keeps winning virtually all sprint events over the Indians), and other circumstances would force one to deny this, there are intermediate cases in which either of the two aggregate descriptive statements would be clearly disputable.

In this context of arbitrariness of 'aggregate description', it becomes particularly tempting to redefine the problem as an 'ethical' exercise, as has indeed been done in the measurement of economic inequality.²³ But the ethical exercises involve exactly similar ambiguities, and furthermore end up answering a different question from the descriptive one that was originally asked.²⁴ There is very little alternative to accepting the element of arbitrariness in the description of poverty, and making that element as clear as possible. Since the notion of the poverty of a nation has some inherent ambiguities, one should not have expected anything else.

2.8 CONCLUDING REMARKS

Poverty is, of course, a matter of deprivation. The recent shift in focus—especially in the sociological literature—from *absolute* to *relative* deprivation has provided a useful framework of analysis (Section 2.4). But relative deprivation is essentially incomplete as an approach to poverty, and supplements (but cannot supplant) the earlier approach of absolute dispossession. The much maligned biological approach, which deserves substantial reformulation but not rejection, relates to this irreducible core of absolute deprivation, keeping issues of starvation and hunger at the centre of the concept of poverty (Sections 2.2 and 2.4).

To view poverty as an issue in inequality, as is often recommended, seems to do little justice to either concept

Poverty and inequality relate closely to each other, but they are distinct concepts and neither subsumes the other (Section 2.3).

There is a good case for viewing the measurement of poverty not, as is often asserted, as an ethical exercise, but primarily as a descriptive one (Section 2.5). Furthermore, it can be argued that the frequently used 'policy definition' of poverty is fundamentally flawed (Section 2.6). The exercise of describing the predicament of the poor in terms of the prevailing standards of 'necessities' does, of course, involve ambiguities, which are inherent in the concept of poverty; but ambiguous description isn't the same thing as prescription.²⁵ Instead, the arbitrariness that is inescapable in choosing between permissible procedures and possible interpretations of prevailing standards requires recognition and appropriate treatment.

²³ See Dalton (1920), Kolm (1969), and Atkinson (1970).

²⁴ See Bentzel (1970), Hansson (1977), and Sen (1978b).

²⁵ The underlying methodological issues have been discussed in Sen (1980a).

Chapter 3

Poverty: Identification and Aggregation

3.1 COMMODITIES AND CHARACTERISTICS

It was argued in the last chapter that the measurement of poverty can be split into two distinct operations, viz. the *identification* of the poor, and the *aggregation* of their poverty characteristics into an over-all measure. The identification exercise is clearly prior to aggregation. The most common route to identification is through specifying a set of 'basic'—or 'minimum'—needs,¹ and regarding the inability to fulfil these needs as the test of poverty. It was claimed in the last chapter that considerations of relative deprivation are relevant in specifying the 'basic' needs, but attempts to make relative deprivation the *sole* basis of such specification is doomed to failure since there is an irreducible core of absolute deprivation in the concept of poverty. Within the general perspective that was presented in the last chapter, some detailed—and more technical—issues are taken up in this chapter before moving from identification to aggregation.

Are the basic needs involved in identifying poverty better specified in terms of commodities, or in terms of 'characteristics'? Wheat, rice, potatoes, etc., are commodities, while calories, protein, vitamins, etc., are characteristics of these commodities that the consumers seek.² If each characteristic could be obtained from only one commodity and no others, then it would be easy to translate the characteristics needs into commodity needs. But this is very often not the case, so that characteristics requirements do not specify commodity requirements. While calories are necessary for survival, neither wheat nor rice is.

¹ The literature on basic needs is vast. For some of the main issues involved, see IL (1976a, 1976b), Haq (1976), Jolly (1976), Stewart and Streeten (1976), Beckerman (1977), Bhalla (1977), Ghai, Khan, Lee and Alifthan (1977), Streeten (1977), Balogh (1978), Griffin and Khan (1978), Perkins (1978), Singh (1978), and Streeten and Bui (1978). On related issues, see also Adelman and Morris (1973), Chenery, Ahluwalia, Bolluyt and Jolly (1974), Morawetz (1977), Reutlinger and Selowsky (1976), Drewnowski (1977), Grant (1978), Chichilnisky (1979), Morris (1979), and Fields (1980).

² For analyses of consumer theory in terms of characteristics, see Gorman (1956, 1976) and Lancaster (1966).

The characteristics needs are, in an obvious sense, prior to the needs for commodities, and translation of the former to the latter is possible only under special circumstances. Multiplicity of sources is, however, not uniform. Many commodities provide calories or proteins; rather few commodities provide shelter. Literacy comes almost entirely from elementary schooling, even though there are, in principle, other sources. In many cases, therefore, it is possible to move from characteristics requirements to commodity requirements—broadly defined—with rather little ambiguity. It is for this reason that 'basic' or 'minimum' needs are often specified in terms of a hybrid *vector*—e.g. amounts of calories, proteins, housing, schools, hospital beds—some of the components being pure characteristics while others are unabashed commodities. While there is some evidence that such mongrelism disconcerts the purist, it is quite economic, and typically does little harm.

An interesting intermediate case arises when a certain characteristic can be obtained from several different commodities, but the tastes of the community in question guarantee that the characteristic is obtained from one commodity only. A community may, for example, be wedded to rice, and may not treat the alternative sources of calories (or carbohydrates) as acceptable. A formal way of resolving the issue is to define the characteristic 'calories from rice' as the thing sought by the consumer in question, so that rice and rice alone can satisfy this. This is analytically adequate if a little underhand. But there are all too other ways of handling the problem, e.g. the assumption that the group seeks calories as such but treats rice as its only *feasible* source. While these conceptual distinctions may not have much immediate practical importance, they tend to suggest rather different approaches to policy issues involving taste variations. The role of knowledge accumulation in reforming ideas of edible diets may in fact be an important part of nutritional planning. The knowledge in question includes both information about nutrition as such and experience of how things taste (once one breaks out of the barrier spotted by the old Guinness ad: 'I have never tasted it because I don't like it').

The dietary habits of a population are not, of course, immutable, but they have remarkable staying power. In making inter-community comparisons of poverty, the contrast between for-

mutating needs in terms of characteristics and formulating needs in terms of commodities may turn out to be significant. For example, the ranking of rural living standards in different states in India changes significantly when the basis of comparison is shifted from command over commodities to command over characteristics such as calories and protein.³ There is little doubt that ultimately characteristics provide the more relevant basis for specification of basic needs, but the relative inflexibility of taste factors makes the conversion of these basic needs into minimum cost diets a function not merely of prices but also of consumption habits.⁴ Explicit account would have to be taken of this issue in completing the identification exercise. This last question is further discussed in the next section.

3.2 THE DIRECT METHOD VERSUS THE INCOME METHOD

In identifying the poor for a given set of 'basic needs', it is possible to use at least two alternative methods.⁵ One is simply to check the set of people whose actual consumption baskets happen to leave some basic need unsatisfied. This we may call the 'direct method', and it does not involve the use of any income notion, in particular not that of a poverty-line income. In contrast, in what may be called the 'income method', the first step is to calculate the minimum income at which all the specified minimum needs are satisfied. The next step is to identify those whose actual incomes fall below that poverty line.

In an obvious sense the direct method is superior to the income method, since the former is not based on particular assumptions of consumption behaviour which may or may not be accurate. Indeed, it could be argued that *only* in the absence of direct information regarding the satisfaction of the specified needs can there be a case for bringing in the intermediary of income, so that the income method is at most a second best.

There is much to be said for such a view, and the income method can indeed be seen as a way of approximating the results

³ See Sen (1976d) on this general issue, and Rath (1973), Bhattacharya and Chatterjee (1974, 1977), and Sen (1976b), on the underlying empirical studies.

⁴ While dietary habits are not easy to change, they do, of course, undergo radical transformation in a situation of extreme hunger, for example in famine conditions. In fact one of the more common causes of death during a famine is diarrhoea caused by eating unfamiliar food—and non-food (see Appendix D below).

⁵ The distinction relates closely to Seebohm Rowntree's (1901) contrast between 'primary' and 'secondary' poverty.

of the direct method. However, this is not all there is to the contrast of the two methods. The income method can also be seen as a way of taking note of individual idiosyncrasies without upsetting the notion of poverty based on deprivation. The ascetic who fasts on his expensive bed of nails will be registered as poor under the direct method, but the income method will offer a different judgement in recognition of his level of income, at which typical people in that community would have no difficulty in satisfying the basic nutritional requirements. The income of a person can be seen not merely to be a rough aid to predicting a person's actual consumption, but also as capturing a person's *ability* to meet his minimum needs (whether or not he, in fact, chooses to use that ability).⁶

There is a difficult line to draw here. If one were to look merely for the ability to meet minimum needs without being bothered by tastes, then one would, of course, set up a cost-minimizing programming problem and simply check whether someone's income falls short of that minimum cost solution. Such minimum cost diets are typically very inexpensive but exceedingly dull, and are very often regarded as unacceptable. (In Indira Rajaraman's (1974) pioneering work on poverty in Punjab, in an initial round of optimization, unsuspecting Punjabis were subjected to a deluge of Bengal grams.) Taste factors can be introduced through constraints (as Rajaraman did, and others do), but it is difficult to decide how pervasive and severe these constraints should be. In the extreme case the constraints determine the consumption pattern entirely.

But there is, I believe, a difference in principle between taste constraints that apply broadly to the entire community and those which essentially reflect individual idiosyncrasies. If the poverty-line income can be derived from typical behaviour norms of society, a person with a higher income who is choosing to fast on a bed of nails can, with some legitimacy, be declared to be non-poor. The income method does, therefore, have some merit of its own aside from its role as a way of approximating what would have been yielded by the direct method had all the detailed consumption data been available.

The 'direct method' and the 'income method' are not, in fact,

The income method has close ties with the welfare economics of real income comparisons; see Hicks (1958).

two alternative ways of measuring the same thing, but represent two alternative *conceptions* of poverty. The direct method identifies those whose actual consumption fails to meet the accepted conventions of minimum needs, while the income method is after spotting those who do not have the ability to meet these needs within the behavioural constraints typical in that community. Both concepts are of some interest on their own in diagnosing poverty in a community, and while the latter is a bit more remote in being dependent on the existence of some typical behaviour pattern in the community, it is also a bit more refined in going beyond the observed choices into the notion of ability. A poor person, on this approach, is one whose income is not adequate to meet the specified minimum needs in conformity with the conventional behaviour pattern.⁷

The income method has the advantage of providing a metric of numerical distances from the 'poverty line', in terms of income short-falls. This the 'direct method' does not provide, since it has to be content with pointing out the short-fall of each type of need. On the other hand, the income method is more restrictive in terms of preconditions necessary for the 'identification' exercise. First, if the pattern of consumption behaviour has no uniformity, there will be no specific level of income at which the 'typical' consumer meets his or her minimum needs. Second, if prices facing different groups of people differ, e.g. between social classes or income groups or localities, then the poverty line will be group-specific, even when uniform norms and uniform consumption habits are considered.⁸ These are real difficulties and cannot be wished away. That the assumption of a uniform poverty line for a given society distorts reality seems reasonably certain. What is much less clear, however, is the *extent* to which reality is thus distorted, and the seriousness of the distortion for the purposes for which the poverty measures may be used.

3.3 FAMILY SIZE AND EQUIVALENT ADULTS

Another difficulty arises from the fact that the family rather than the individual is the natural unit as far as consumption behaviour

⁷ The income method is based on *two* distinct sets of conventions, viz. (1) those used to identify the minimum needs, and (2) those used to specify behaviour and taste constraints.
⁸ For evidence of sharp differences in income-group-specific price deflators in India see Bardhan (1973), Vaidyanathan (1974) and Radhakrishna and Sarma (1975), among others. See also Osmani (1978).

is concerned. In calculating the income necessary for meeting the minimum needs of families of different size, some method of correspondence of family income with individual income is needed. While the simplest method of doing this is to divide the family income by the number of family members, this overlooks the economies of large scale that operate for many items of consumption, and also the fact that the children's needs may be quite different from those of adults. To cope with these issues, the common practice for both poverty estimation and social security operations is to convert each family into a certain number of 'equivalent adults' by the use of some 'equivalence scale', or, alternatively, to convert the families into 'equivalent households'.⁹

There tends to be a lot of arbitrariness in any such conversion. Much depends on the exact consumption pattern of the people involved, which varies from family to family and with age composition. Indeed, both the minimum needs of children as well as variations of consumption behaviour of families with variations of the number and age composition of children are complex fields for empirical investigation. The question of *misdistribution within the family* is also an important issue requiring a good deal more attention than it has received so far.

There are also different bases for deriving appropriate equivalence of needs.¹⁰ One approach is to take the nutritional requirements for each age group separately and then to take the harmonies of their costs, given established patterns of consumer behaviour. The acceptability of this approach depends not solely on the validity of the nutritional standards used, but also on the assumption that family behaviour displays the same pattern for fulfilling the respective nutritional requirements of members of different age groups in the family.¹¹ It also ignores economies of scale in consumption which seem to exist even for such items as food.

Second approach is to examine how the people involved in the equivalence question themselves, viz. how much extra

⁹ See Shansky (1965), Abel-Smith and Townsend (1965), and Atkinson (1969), among others. See also Fields (1980).

¹⁰ An illuminating account of these methods and their underlying logic, see Deaton and Cartwright (1980).

¹¹ Another important variable is the work load, including that of the children, which seems to be high in many poor economies; see Hansen (1969) and Hamilton (1975).

income they think is needed to make a larger family have the same standard of well-being as a smaller one. Empirical studies of these 'views' (e.g., Goedhart, Halberstadt, Kapteyn, and van Praag, 1977) have shown considerable regularities and consistency.

A third way is to examine the actual consumption behaviour of families of different size and to treat some aspect of this behaviour as an indicator of welfare. For example, the fraction spent on food has been treated as an indicator of poverty: two families of different size are regarded as having 'equivalent' incomes when they spend the same proportion of their incomes on food.¹²

No matter how these equivalent scales are drawn up, there remains the further issue of the weighting of families of different size. Three alternative approaches may be considered: (1) put the same weight on each *household*, irrespective of size; (2) put the same weight on each *person*, irrespective of the size of the family to whom they belong; and (3) put a weight on each *family* equal to the number of equivalent adults in it.

The first method is clearly unsatisfactory since the poverty and suffering of a large family is, in an obvious sense, greater than that of a small family at a poverty level judged to be equivalent to that of the former. The third alternative might look like a nice compromise, but is, I believe, based on a confusion. The scale of 'equivalent adults' indicates conversion factors to be used to find out how well off members of that family are, but ultimately we are concerned with the sufferings of *everyone* in the family and not of a hypothetical equivalent number. If two can live as cheaply as one and a half and three as cheaply as two, these facts must be taken into account in comparing the relative well-beings of two member and three-member families; but there is no reason why the suffering of two three-member families should receive any less weight than that of three two-member families at the same level of illfare. There is, thus, a good case for using procedure (2), after the level of well-being or poverty of each person has been ascertained by the use of equivalent scales taking note of the size and composition of the families to which they belong.

¹² See Muellbauer (1977b) and Deaton and Muellbauer (1980), Chapter 8. The method goes back to Engel (1895). On this approach and others addressed to the problem of comparing well-beings of households, see Friedman (1952), Brown (1954), Frais and Houthakker (1955), Barten (1964), Theil (1967), Nicholson (1976), Muellbauer (1977a), Deaton and Muellbauer (1980), Fields (1980), Kakwani (1980a), and Marris and Theil (1980).

3.4 POVERTY GAPS AND RELATIVE DEPRIVATION

The income short-fall of a person whose income is less than the poverty-line income can be called his 'income gap'. In the aggregate assessment of poverty, these income gaps must be taken into account. But does it make a difference whether or not a person's short-fall is unusually large compared with those of others? It seems reasonable to argue that any person's poverty cannot really be independent of how poor the others are.¹³ Even with exactly the same absolute short-fall, a person may be thought to be 'poorer' if the other poor have short-falls smaller than his, in contrast with the case in which his short-fall is less than that of others. Quantification of poverty would, thus, seem to need the marrying of considerations of absolute and relative deprivation even *after* a set of minimum needs and a poverty line have been fixed.

The question of relative deprivation can be viewed also in the context of a possible transfer of a unit of income from a poor person—call him 1—to another—christened 2—who is richer but still below the poverty line and remains so even after the transfer. Such a transfer will increase the absolute short-fall of the poor person by exactly the same amount by which the absolute short-fall of person 2 will be reduced. Can one then argue that the overall poverty is unaffected by the transfer? One can dispute this, of course, by bringing in some notion of diminishing marginal utility of income, so that the utility loss of the first may be argued to be greater than the utility gain of the second. But such cardinal utility comparisons for different persons involves the use of a rather demanding informational structure with well-known difficulties. In the absence of cardinal comparisons of marginal utility gains and losses, is it then impossible to hold that overall poverty of the community has increased? I would argue that this is not the case.

Person 1 is relatively deprived compared with 2 (and there may be others in between the two who are more deprived than 2 but less so than 1). When a unit of income is transferred from 1 to 2, it increases the absolute short-fall of a *more* deprived person and decreases that of someone *less* deprived, so that in a straightforward

¹³ See Scitovsky (1976) and Hirsch (1976). See also Hirschman and Rothschild

sense the over-all relative deprivation is increased.¹⁴ And this is the case quite irrespective of whether absolute deprivation is measured by income short-falls, or—taking utility to be an increasing function of income—by utility short-falls, from the break-even poverty line. One does not, therefore, have to introduce an interpersonally comparable *cardinal* welfare scale to be able to say that the transfer specified will increase the extent of relative deprivation.

In the 'aggregation' exercise the magnitudes of absolute deprivation may have to be supplemented by considerations of relative deprivation. Before this exercise is studied, it will be useful to review the standard measures of poverty used in the literature and to examine their shortcomings.

3.5 CRITIQUE OF STANDARD MEASURES

The commonest measure of over-all poverty, already discussed in Chapter 2, is the head-count measure H , given by the proportion of the total population that happens to be identified as poor, e.g. as falling below the specified poverty-line income. If q is the number of people who are identified as being poor and n the total number of people in the community, then the head-count measure H is simply q/n .

This index has been widely used—explicitly or by implication—ever since quantitative study and measurement of poverty began (see Booth, 1889; Rowntree, 1901). It seems to be still the mainstay of poverty statistics on which poverty programmes are based (see Orshansky, 1965, 1966; Abel-Smith and Townsend, 1965). It has been extensively utilized recently both for intertemporal comparisons as well as for international contrasts.¹⁵

Another measure that has had a fair amount of currency is the

¹⁴ A complex problem arises when the transfer makes person 2 cross the poverty line—a possibility that has been deliberately excluded in the postulated case. This case involves a reduction in one of the main parameters of poverty, viz. the identification of the poor, and while there is an arbitrariness in attaching a lot of importance to whether a person actually crosses the poverty line, this is an arbitrariness that is implicit in the concept of poverty itself based on the use of a break-even line. The question is investigated further in Section C. 3, pp. 192–4.

¹⁵ See, for example, the lively debate on the time trend of Indian poverty: Ojha (1970), Dandekar and Rath (1971), Minhas (1970, 1971), Bardhan (1970, 1971, 1973), Mukherjee, Bhattacharya and Chatterjee (1972), Bhaty (1974), Kumar (1974), Vaidyanathan (1974), Lal (1976), Ahluwalia (1978), and Dutta (1978). For international comparisons, see Chenery, Ahluwalia, Bell, Duloy and Jolly (1974).

so-called 'poverty gap', which is the aggregate short-fall of income of all the poor from the specified poverty line.¹⁶ The index can be normalized by being expressed as the percentage short-fall of the average income of the poor from the poverty line. This measure—denoted I —will be called the 'income-gap ratio'. The income-gap ratio I is completely insensitive to transfers of income among the poor so long as nobody crosses the poverty line by such transfers. It also pays no attention whatever to the number or proportion of poor people below the poverty line, concentrating only on the aggregate short-fall, no matter how it is distributed and among how many. These are damaging limitations.¹⁷

The head-count measure H is, of course, not insensitive to the number below the poverty line; indeed, for a given society it is the only thing to which H is sensitive. But H pays no attention whatever to the extent of income short-fall of those who lie below the poverty line. It matters not at all whether someone is just below the line or very far from it, in acute misery and hunger. Furthermore, a transfer of income from a poor person to one who is richer can never increase the poverty measure H —surely a perverse feature. The poor person from whom the transfer takes place is, in any case, counted in the value of H , and no reduction of this income will make him count any more than he does already. On the other hand, the person who *receives* the income in a transfer cannot, of course, move below the poverty line as a consequence of this. *Either* he was rich and stays so or was poor and stays so, in both of which cases the H measure remains unaffected; *or* he was below the line but is pulled above it by the transfer, and this makes the measure H fall rather than rise. So a transfer from a poor person to one who is richer can *never* increase poverty as represented by H .

There are, thus, good grounds for rejecting the standard poverty measures in terms of which most of the analyses and policies on poverty have traditionally taken place. The head-count measure in particular has commanded implicit support of a kind that is quite astonishing. Consider A. L. Bowley's (1923) famous assertion: 'There is, perhaps, no better test of the progress

The poverty gap has been used by the US Social Security Administration; see Muller (1971). See also Kakwani (1978) and Beckerman (1979a, 1979b).

The underlying issues have been discussed in Sen (1973b, 1976a). See also Fields

of the nation than that which shows what proportion are in poverty' (p. 214). The spirit of the remark is acceptable enough, but surely not the gratuitous identification of poverty with the head-count measure H .

What about a combination of these poverty measures? The head-count measure H ignores the extent of income short-falls while the income-gap ratio I ignores the numbers involved: why not a combination of the two? This is, alas, still inadequate. If a unit of income is transferred from a person below the poverty line to someone who is richer but who still is (and remains) below the poverty line, then both the measures H and I will remain completely unaffected. Hence any 'combined' measure based only on these two must also show no response whatsoever to such a change, despite the obvious increase in aggregate poverty as a consequence of this transfer in terms of relative deprivation.

There is, however, a special case in which a combination of H and I might just about be adequate. Note that, while individually H is insensitive to the extent of income short-falls and I to the numbers involved, we could criticize the combination of the two only for their insensitivity to variations of distribution of income among the poor. If we were, then, to confine ourselves to cases in which all the poor have precisely the same income, it may be reasonable to expect that H and I together may do the job. Transfers of the kind that have been considered above to show the insensitivity of the combination of H and I will not then be in the domain of our discourse.

The interest of the special case in which all the poor have the same income does not arise from its being a very likely occurrence. Its value lies in clarifying the way absolute deprivation *vis-à-vis* the poverty line may be handled when there is the additional feature of relative deprivation among the poor.¹⁸ It helps us to formulate a condition that the required poverty measure P should satisfy when the problem of distribution among the poor is assumed away by postulating equality. It provides a regularity condition to be satisfied among others.

¹⁸ As was discussed in Section 2.1, the question of relative deprivation *vis-à-vis* the rest of the community is involved also in the fixing of minimum needs on which the choice of the poverty line is based, so that the estimation of 'absolute' deprivation *vis-à-vis* the poverty line involves implicitly some considerations of relative deprivation as well. The reference in the text here is to issues of relative deprivation that remain even after the poverty line has been drawn, since there is the further question of one's deprivation compared with others who are also deprived.

3.6 AXIOMATIC DERIVATION OF A POVERTY MEASURE AND VARIANTS

We may require the poverty measure P to be a weighted sum of the short-falls of all people who are judged to be poor. This is done in a very general way with weights that can be functions of other variables. If we wished to base the poverty measure on some quantification of the sum-total loss of utility arising from the penalty of the poor, then the weights should be derived from the familiar utilitarian considerations. If, additionally, it is assumed that the utility of each person depends only on his own income, then the weight on each person's income gap will depend only on the income of that person, and not also on the incomes of others. This will provide a 'separable' structure, each person's component of the overall poverty being derived without reference to the conditions of the others. But this use of the traditional utilitarian model will miss the idea of relative deprivation, which—as we have already argued—is rather central to the notion of poverty. Furthermore, there are difficulties with such cardinal comparisons of utility gains and losses, and even if these were ignored, it is no easy matter to secure agreement on using one particular utility function among so many that can be postulated, all satisfying the usual regularity conditions (such as diminishing marginal utility).

Instead, the concentration can be precisely on aspects of relative deprivation. Let $r(i)$ be the rank of person i in the ordering of all the poor in the decreasing order of income; e.g. $r(i) = 12$ if i is the twelfth worst off among the poor. If more than one person has the same income, they can be ranked in any arbitrary order: the poverty measure must be such that it should not matter which particular arbitrary order is chosen among those with the same income. Clearly, the poorest poor has the largest rank value q , when there are q people altogether on this side of the poverty line, while the least poor has the rank value of 1 . The greater the rank value, the more the person is deprived in terms of relative deprivation with respect to others in the same category.¹⁹ It is, thus, reasonable to argue that a poverty measure capturing this aspect of relative deprivation must make the weight on a person's income short-fall increase with his rank value $r(i)$.

¹⁹ Cf. Runciman (1966) and Townsend (1971).

A rather distinguished and simple case of such a relationship is to make the weight on any person i 's income gap equal the rank value $\tau(i)$. This makes the weights equidistant, and the procedure is in the same spirit as Borda's (1781) famous argument for the rank-order method of voting, choosing equal distances in the absence of a convincing case for any alternative assumption. While this too is arbitrary, it captures the notion of relative deprivation in a simple way, and leads to a transparent procedure, making it quite clear what precisely is being assumed.²⁰

This axiom of 'Ranked Relative Deprivation' (axiom R) focuses on the distribution of income among the poor, and may be combined with the kind of information that is presented by the head-count measure H and the income-gap ratio I in the special case in which everyone below the poverty line has the same income (so that there is no distribution problem among the poor). H presents the proportion of people who are deprived in relation to the poverty line, and I reflects the proportionate amount of absolute income deprivation *vis-à-vis* that line. It can be argued that H catches one aspect of overall deprivation, viz. how many (never mind how much), while I catches another aspect of it, viz. how much on the average (never mind suffered by how many). In the special case when all the poor have the same income, H and I together may give us a fairly good idea of the extent of poverty in terms of over-all deprivation. Since the problem of relative deprivation among the poor does not arise in this special case, we may settle for a measure that boils down to some function of only H and I under these circumstances. A simple representation of this, leading to a convenient normalization, is the product HI . This may be called the axiom of 'Normalized Absolute Deprivation' (axiom A).²¹

If these two axioms are imposed on a quite general format of

the poverty measure being a weighted sum of income gaps, then a precise measure of poverty emerges (as shown in Sen, 1973b, 1976a). When G is the Gini coefficient of the distribution of income among the poor, this measure is given by $P \equiv H\{I + (1 - I)G\}$. The precise axiomatic derivation is discussed in Appendix C. When all the poor have the same income, then the Gini coefficient G of income distribution among the poor equals zero, and P equals HI . Given the same average poverty gap and the same proportion of poor population in total population, the poverty measure P increases with greater inequality of incomes below the poverty line, as measured by the Gini coefficient. Thus, the measure P is a function of H (reflecting the number of poor), I (reflecting the aggregate poverty gap), and G (reflecting the inequality of income distribution below the poverty line). The last captures the aspect of 'relative deprivation', and its inclusion is indeed a direct consequence of the axiom of Ranked Relative Deprivation.

Many interesting empirical applications of this approach to the measurement of poverty have been made,²² and several variants of it have also been considered in the literature,²³ which will be discussed in Appendix C. While the measure P has certain unique advantages which its axiomatic derivation brings out, several of the variants are certainly permissible interpretations of the common conception of poverty. There is nothing defeatist or nihilistic in the acceptance of this 'pluralism'. Indeed, as argued in Chapter 2, such pluralism is inherent in the nature of the exercise. But the important point to recognize is that the assessment of overall poverty has to take note of a variety of considerations capturing different features of absolute and relative deprivation. Such simplistic measures as the commonly used head-count ratio H , or the poverty-gap ratio I , fail to do justice to some of these features. It is necessary to use complex measures such as the index P to make the measurement of

²⁰ It is, in fact, possible to derive the characteristic of equidistance from other—more primitive—axioms (see Sen, 1973b, 1974).

²¹ It should be remembered that in fixing the poverty line considerations of relative deprivation have already played a part, so that absolute deprivation *vis-à-vis* the poverty line is non-relative only in the limited context of the 'aggregation' exercise. As was discussed earlier, the concepts of absolute and relative deprivation are both relevant to each of the two exercises in the measurement of poverty, viz. identification and aggregation. Axioms A and R are each concerned exclusively with the aggregation exercise.

²² See, for example, Ahluwalia (1978), Alamgir (1976, 1978a), Anand (1977), Bhattry (1977), Clark, Hemming and Ulph (1979), Dutta (1978), Fields (1979), Ginneken (1979), Kakwani (1978, 1980), Osmani (1978), Pantulu (1980), Sastry (1977, 1980), Sen and Diwan (1975), Szal (1977), among others.

²³ See Anand (1977), Blackorby and Donaldson (1980a), Clark, Hemming and Ulph (1979), Banada and Takayama (1978), Kakwani (1978), Osmani (1978), Pyatt (1977), Takayama (1979), Thon (1979, 1980), Fields (1980), and Szal (1977, 1980b), among others.

poverty sensitive to the different features that are implicit in our ideas on poverty. In particular, the question of distribution remains relevant even when incomes *below* the poverty line are considered. It will be necessary to go into this question further in the context of analysing starvation and famines, as is done in the chapters that follow.²⁴

Chapter 4

Starvation and Famines

4.1 FAMINES

Famines imply starvation, but not vice versa. And starvation implies poverty, but not vice versa. The time has come for us to move from the general terrain of poverty to the disastrous phenomenon of famines.

Poverty, as was discussed in Chapter 2, can reflect relative deprivation as opposed to absolute dispossession. It is possible for poverty to exist, and be regarded as acute, even when no serious starvation occurs. Starvation, on the other hand, does imply poverty, since the absolute dispossession that characterizes starvation is more than sufficient to be diagnosed as poverty, no matter what story emerges from the view of *relative* deprivation.

Starvation is a normal feature in many parts of the world, but this phenomenon of 'regular' starvation has to be distinguished from violent outbreaks of famines. It isn't just regular starvation which one sees in 436 BC, when thousands of starving Romans threw themselves into the Tiber²⁵; or in Kashmir in AD 918, when 'one could scarcely see the water of Vitasia [Jhelum] entirely covered as the river was with corpses'; or in 1333-7 in China, when 'we are told—four million people died in one region only; in 1770 in India, when the best estimates point to ten million starvings; or in 1845-51 in Ireland, when the potato famine killed about one-fifth of the total Irish population and led to the emigration of a comparable number.¹ While there is quite a difference on how to 'define' famines,² one can very often become absorbing accounts of the phenomenon of famines in different parts of the world. For some comparative analysis, see Malloy (1926), Ghosh (1944), Woodham-Smith (1962), Masfield (1963), Stephens (1966), Bhattacharya (1967), Blix, Hofstadter and Johnson (1971), Johnson (1973), Aykroyd (1974), Hussain (1976), Tudge (1977), and others (1978b, 1980), among a good many other studies. Early accounts of famines in the Indian subcontinent can be found in Kautilya (*circa* 320 BC) and Abul Fazl (1592), in other documents.

One of the many definitions: 'On balance it seems clear that any satisfactory definition of famine must provide that the food shortage is either widespread or extreme if and that the degree of extremity is best measured by human mortality from starvation' (Masfield, 1963, pp. 3-4). 'An extreme and protracted shortage of food

²⁴ The relevance of this aspect of the distributional question is brought out in the empirical studies of starvation and famine (Chapters 6-9), and the general argument assessed in that light (Chapter 10).

diagnose it—like a flood or a fire—even without being armed with a precise definition.³

In distinguishing between starvation and famine, it is not my intention here to attribute a sense of deliberate harming to the first absent in the second, as intended by the Irish American Malone in Bernard Shaw's *Man and Superman*:

Malone: Me father died of starvation in the black 47. Maybe you've heard of it?

Violet: The Famine?

Malone: No, the starvation. When a country is full o food and exporting it, there can be no famine. Me father was starved dead; and I was starved out to America in me mother's arms.⁴

The history of famines as well as of regular hunger is full of blood-boiling tales of callousness and malevolence—and I shall have something to say on this—but the distinction between starvation and famine used in this work does not relate to this. Starvation is used here in the wider sense of people going without adequate food, while famine is a particularly virulent manifestation of it causing widespread death; that is, I intend to use the two words in their most common English sense.⁵

4.2 THE TIME CONTRAST

In analysing starvation in general, it is important to make clear distinctions between three different issues. (1) *lowness of the typical level of food consumption*; (2) *declining trend of food consumption*

resulting in widespread and persistent hunger, evidenced by loss of body weight and emaciation and increase in the death rate caused either by starvation or disease resulting from the weakened condition of the population' (Johnson, 1973, p. 58). 'In statistical term, it can be defined as a severe shortage of food accompanied by a significant increase in the local or regional death rate' (Mayer, 1975). 'Famine is an economic and social phenomenon characterised by the widespread lack of food resources which, in the absence of outside aid, leads to death of those affected' (UNRISD, 1975). I hope the reader has got the point.

³ The definitional exercise is more interesting in providing a pithy description of what happens in situations clearly diagnosed as one of famine than in helping us to do the diagnosis—the traditional function of a definition. For example, Gale Johnson's (1972) pointer to disease in addition to starvation directs our attention to an exceptionally important aspect of famines (see Chapter 8 and Appendix D below). See also Morison (1974).

⁴ G. Bernard Shaw, *Man and Superman*, Penguin, Harmondsworth, 1946, p. 196.

⁵ The meaning of 'starve' as 'to cause to die, to kill, destroy' is described by *The Shorter Oxford English Dictionary* as 'obsolete' (with its latest recorded use being placed in 1769 but—of course—the meaning 'to cause to perish of hunger' or 'to keep scantily supplied with food' survives; and—alas—has much descriptive usage in the modern world.

and (3) *sudden collapse* of the level of food consumption. Famine is chiefly a problem of the third kind, and while it can—obviously—be helped by the first two features, it often does not work that way.

For example, in dealing with the trend of foodgrains availability in India in this century, S. R. Sen (1971) notes the following dichotomy between the trend of the moving average and the level of the minimal values (pp. 2–3):

A study of these data shows that during the first 24 years of the century foodgrains production increased at an average annual rate of 0.81 per cent per annum on the average, the trough points showed a declining trend of 0.14 per cent per annum on the average and there was a growing divergence. Thus, while the foodgrains production showed a rising trend, the instability was also on the increase. . . . The next 24 years, however, presented a completely different picture. During this period, foodgrains production showed a declining trend of 0.02 per cent per annum on the average, in spite of the fact that droughts turned out to be relatively moderate and less frequent. In contrast with the previous period, while the peak points reached showed a declining trend of 0.04 per cent, the trough points recorded a rising trend of 0.10 per cent per annum on the average and the two were converging.

A similar contrast has been suggested for Japan in comparing food consumption in the Meiji period with that in the Tokugawa period by Nakamura (1966).⁶ He argues:

The fact of food consumption picture of the Tokugawa period (and earlier) is that of periodic food shortages and famine owing to the high incidence of natural calamities. In view of this, it is even possible that the Japanese were regularly but consumed less food on the average in the later Meiji era than they did in late Tokugawa before food imports became available to relieve shortages.⁷

There is, of course, nothing in the least bit surprising about a trend being accompanied by bigger fluctuations, or a trend going with greater stability.⁸ Even more obvious is

underlying empirical generalisation about trends of food availability has been, the subject of some controversy. See also Ohkawa (1957) and Ohkawa and (1973).

Nakamura (1966), p. 100; italics added. See also a similar contrast in Eric Hobsbawm's analysis of the British standard of living during 1790–1850 (Hobsbawm, 1967, p. 46).

An empirical issue as to whether the quoted views of the Indian or Japanese history are correct is, of course, a different question.

the fact that a rising trend need not *eliminate* big fluctuations. Indeed, there are good reasons to think that the trend of food availability per head in recent years has been a rising one in most parts of the world,⁹ but nevertheless acute starvation has occurred quite often, and there is some evidence of intensification of famine threats.¹⁰ While this is partly a problem of distribution of food between different groups in a nation—an issue to which shall turn presently—there is also the time contrast (in particular, the problem of sharp falls against a generally rising trend). Famines can strike even when regular starvation is on firm decline.

The food crisis of 1972 is a global example of this time contrast. Colin Tudge (1977) describes the development in dramatic terms:

The 1960s brought good harvests, augmented by the Third World 'green revolution', based on American-developed dwarf strains of wheat and rice. The world's food problem was not shortage apparently, but over-production, leading to low prices and agricultural depression. The US took land out of production, and in the early 1970s both the US and Canada ran down their grain stores. Then the bad weather of 1972 brought dismal harvests to the USSR, China, India, Australia and the Sahel countries south of Sahara. Russia bought massively in the world grain markets before others, including the US, realized what was happening. By mid-1974 there was only enough grain left in store to feed the world's population for three-and-a-half weeks; terrifying brinkmanship.¹¹

In all this the focus has been on the *total* availability of food for the nation as a whole, or even for the world as a whole. But exactly similar contrasts hold for food availability to a particular section of a given community. A sudden collapse of the command of a group over food can go against a rising trend (or against typically high level of food consumption). Problems (i) existence of much regular starvation, (ii) worsening trend to regular starvation, and (iii) sudden outbreak of acute starvation are quite distinct. While they can accompany each other, they need not, and often do not, do so.

⁹ See FAO (1979). See also Aziz (1975), p. 116, Table 2; and Sinha (1976a), p. Table 1.

¹⁰ See Blix, Hofvander and Vahlquist (1971); UNRISD (1975, 1978); Aziz (1975) and Tudge (1977).

¹¹ Tudge (1977), p. 2.

4.3 THE GROUP CONTRAST

While famines involve fairly widespread acute starvation, there is no reason to think that it will affect all groups in the famine-affected nation. Indeed, it is by no means clear that there has ever occurred a famine in which all groups in a country have suffered from starvation, since different groups typically do have very different commanding powers over food, and an over-all shortage brings out the contrasting powers in stark clarity.

There has been some speculation as to whether such a comprehensive famine was not observed in India in 1344–5 (see Walford 1878, and Alamgir 1980, p. 14). There is indeed some evidence for this famine being a very widespread one. In fact, the authoritative *Encyclopaedia Britannica* saw the famine as one in which even 'the Mogul emperor was unable to obtain the necessities for his household' (Eleventh Edition, 1910–1, vol. X, p. 667). This is most unlikely since the Mogul empire was not established in India until 1526! But it is also doubtful that the Tughlak king then in power—Mohammad Bin Tughlak—was really unable to obtain his household necessities, since he had the resources to organize one of the most illustrious famine relief programmes, including remitting taxes, distributing cash, and opening relief centres for the distribution of cooked food (see Howeday, 1916). One has to be careful about anecdotal history, and as a companion volume of the same *Encyclopaedia* points out, the idea that Alfred, during his retreat at Athenley, was a helpless fugitive rests upon the foolish legend of the cakes'. This is, however, not to deny that some famines are much more widespread than others, and Alamgir is certainly right that the much famine during 1944 was very widely shared by the Dutch population.¹²

The importance of inter-group distributional issues rests not merely in the fact that an over-all shortage may be very irregularly shared by different groups,¹³ but also in the recognition that some groups can suffer acute absolute deprivation

¹² Gylkroyd (1974), Chapter 10, and Stein, Susser, Saenger and Marolla (1975). The contrast that has received much professional attention recently is that between urban and rural population (see particularly Lipton, 1977). This contrast is indeed not so much implicit in some famines (see for example Chapter 6 below), but there are more specialized, group conflicts which deserve more attention (some of these are taken up in Chapters 6, 7, 8, and 9).

even when there is no over-all shortage. There is no reason whatsoever to think that the food consumption of different groups must vary in the same *direction* (even if by different proportions and amounts), and in later chapters cases will be encountered in which different groups' fortunes moved sharply in opposite directions.

Chapter 5

The Entitlement Approach

5.1. ENDOWMENT AND EXCHANGE

The entitlement approach to starvation and famines concentrates on the ability of people to command food through the legal means available in the society, including the use of production possibilities, trade opportunities, entitlements *vis-à-vis* the state, and other methods of acquiring food. A person starves *either* because he does not have the ability to command enough food, *or* because he does not use this ability to avoid starvation. The entitlement approach concentrates on the former, ignoring the latter possibility. Furthermore, it concentrates on those means of commanding food that are legitimized by the legal system in operation in that society. While it is an approach of some generality, it makes no attempt to include all possible influences that can in principle cause starvation, for example illegal transfers (e.g. looting), and choice failures (e.g. might to inflexible food habits).

Ownership of food is one of the most primitive property rights, and in each society there are rules governing this right. The entitlement approach concentrates on each person's entitlements to commodity bundles including food, and views starvation as resulting from a failure to be entitled to a bundle with enough

food. In a fully directed economy, each person i may simply get a particular commodity bundle which is assigned to him. To a certain extent this happens in most economies, e.g. to residents of people's homes or of mental hospitals. Typically, however, each person has a menu—possibly wide—to choose from. E_i is the set of commodity bundles that person i in a given society, in a given situation, is entitled to. It consists of a set of alternative commodity bundles, any one of which the person can decide to have. In an economy with free ownership and exchange in the form of trade (exchange with others) and production (exchange with nature), E_i can be characterized as depending on two parameters, viz. the endowment of the person (the ownership bundle) and the exchange

entitlement mapping (the function that specifies the set of alternative commodity bundles that the person can command respectively for each endowment bundle).¹ For example, a peasant has his land, labour power, and a few other resources, which together make up his endowment. Starting from that endowment he can produce a bundle of food that will be his. Or, by selling his labour power, he can get a wage and with that buy commodities including food. Or he can grow some cash crops and sell them to buy food and other commodities. There are many other possibilities. The set of all such available commodity bundles in a given economic situation is the exchange entitlement set of his endowment. The exchange entitlement mapping specifies the exchange entitlement set of alternative commodity bundles respectively for each endowment bundle. The formal relations are analysed in Appendix A.

The exchange entitlement mapping, or E-mapping for short, will depend on the legal, political, economic and social characteristics of the society in question and the person's position in it. Perhaps the simplest case in terms of traditional economic theory is one in which the endowment bundle can be exchanged in the market at fixed relative prices for any bundle costing no more and here the exchange entitlement will be a traditional 'budget set'.

Bringing in production will make the E-mapping dependent on production opportunities as well as trade possibilities of resources and products. It will also involve legal rights to apportioning the product, e.g. the capitalist rule of the 'entrepreneur' owning the produce. Sometimes the social conventions governing the rights can be very complex indeed—for example those governing the rights of migrant members of peasant families to a share of the peasant output (see Sen, 1975).

Social security provisions are also reflected in the E-mapping such as the right to unemployment benefit if one fails to find a job or the right to income supplementation if one's income would otherwise fall below a certain specified level. And so are employment guarantees when they exist—as they do in some social economies—giving one the option to sell one's labour power to the government at a minimum price. E-mappings will depend also on provisions of taxation.

¹ Formally, an exchange entitlement mapping $E_i(\cdot)$ transforms an endowment vector of commodities \mathbf{x} into a set of alternative availability vectors of commodities E_i .

Let the set of commodity bundles, each of which satisfies person i 's minimum food requirement, be F_i . Person i will be forced to starve because of unfavourable entitlement relations if and only if he is not entitled to any member of F_i given his endowment and his exchange entitlement mapping. The 'starvation set' S_i of endowments consists of those endowment bundles such that the exchange entitlement sets corresponding to them contain no bundles satisfying his minimum food requirements.²

5.2 STARVATION AND ENTITLEMENT FAILURES

Person i can be plunged into starvation if his endowment collapses into the starvation set S_i either through a fall in the endowment bundle, or through an unfavourable shift in the exchange entitlement mapping. The distinction is illustrated in Figure 5.1 in terms of the simple case of pure trade involving only two commodities, food and non-food. The exchange entitlement mapping is taken to assume the simple form of constant price exchange. With a price ratio p and a minimum food requirement \bar{x}_1 , the starvation set S_i is given by the region OAB . If the endowment vector is \mathbf{x} , the person is in a position to avoid starvation. This ability can fail either (1) through a lower endowment vector, e.g. \mathbf{x}^* , or (2) through a less favourable exchange entitlement mapping, e.g. that given by p^* , which would make the starvation set OAC .

It is easy to see that starvation can develop for a certain group of people as its endowment vector collapses, and there are indeed many accounts of such endowment declines on the part of the poor rural population in developing countries through alienation of land, sale of livestock, etc. (see, for example, Griffin, 1976, 1978; Feder, 1977; and Griffin and Sen, 1977).³ Shifts in exchange entitlement mappings are less palpable, and more difficult to trace, but starvation can develop with *unchanged* asset ownership through move-

² For formalities, see Appendix A. For applications see Chapters 6–10 and Appendix 1. Sen (1976c, 1977b, 1979c); Griffin (1978); Hay (1978b); Ghosh (1979); Penny Chakla (1979); Seaman and Holt (1980); and Heyer (1980).

³ Sen's analysis affects not merely the ability to exchange the asset directly with food, but the ability to borrow against one's future earning power. Given the nature of the assets, substantial borrowing is typically impossible without tangible securities. Situations of the capital markets often constitute an important aspect of famine

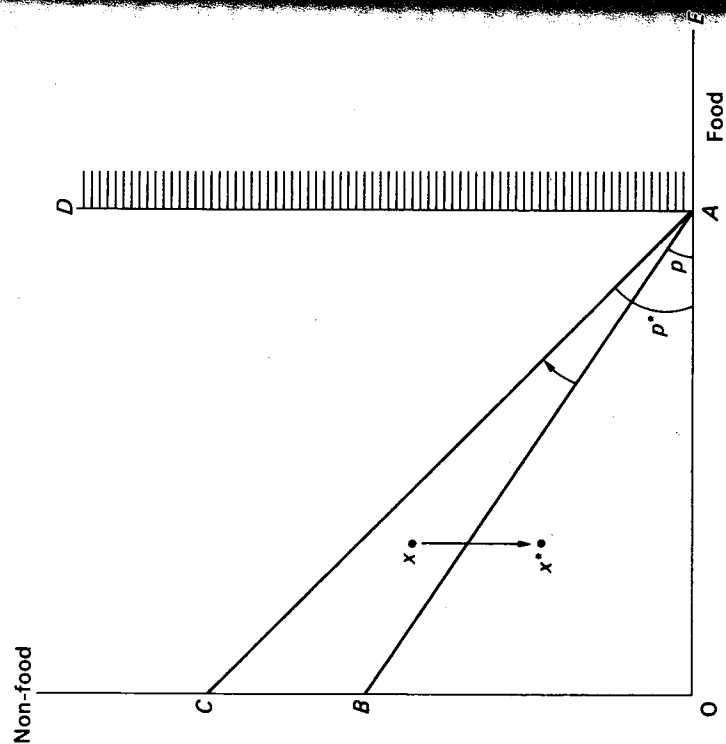


FIG. 5.1 Illustration of Endowment and Entitlement

ments of exchange entitlement mapping.⁴ This would be impossible only if the endowment vector itself contained enough food, for example, in figure 5.1, if it belonged to the region DAE . The characteristics of commodities in most people's endowment bundles rule out this possibility.

5.3 LIMITATIONS OF THE ENTITLEMENT APPROACH

Before proceeding to the use of the entitlement approach, a few of the limitations may be briefly noted. First, there can

⁴ Shifts in E-mapping may arise from different sources, e.g. growth of unemployment, changes in relative prices and terms of trade, variations in social security (see Chapter 6 and Appendix A). For an insightful analysis of the role of trade in economic development, see Mitra (1977).

ambiguities in the specification of entitlements. Even in capitalist market economies, entitlements may not be well defined in the absence of a market-clearing equilibrium,⁵ and in pre-capitalist economies there can be a good deal of vagueness on property rights and related matters.⁶ In many cases the appropriate characterization of entitlements may pose problems,⁷ and in some cases it may well be best characterized in the form of 'fuzzy' sets and related structures—taking precise note of the vagueness involved.⁸ In empirical studies of actual famines the question of precision is compromised by data problems as well, and the focus here will be not on characterizing entitlements with pretended exactitude, but on studying shifts in some of the main ingredients of entitlements. Big shifts in such ingredients can be decisive in causing entitlement failures, even when there is some 'fuzziness' in the entitlement relations.

Second, while entitlement relations concentrate on rights within the given legal structure in that society, some transfers involve violation of these rights, such as looting or brigandage. When such extra-entitlement transfers are important, the entitlement approach to famines will be defective. On the other hand, recent famines seem to have taken place in societies with law and order, without anything 'illegal' about the processes leading to starvation. In fact, in guarding ownership rights against the demands of the hungry, the legal forces uphold entitlements; for example, in the Bengal famine of 1943 the people who died in front of well-stocked food shops protected by law were denied food because of lack of legal entitlement, not because their entitlements were violated.¹⁰

⁵ See Debreu (1959), and Arrow and Hahn (1971).

⁶ There are also legal and economic ambiguities in an open 'black market' (see Sen, 1956).

⁷ This was also the critique by Ronald Dworkin (1977) of 'legal positivism', disputing the view that law is a set of 'rules', and emphasizing the role of 'principles, policies, and standards' (p. 22), which are, of course, inherently more ambiguous.

⁸ A similar problem arises from the ambiguity of values in economic planning, where—rather than 'point'—specification of shadow prices leading to partial equilibrium (see Sen, 1975). Correspondingly here, the possible set of endowment vectors may be decomposed into three subsets, viz. definitely starvation set, definitely non-starvation set, and a third set.

¹⁰ Sen (1944) and also Famine Inquiry Commission (1943a).

¹¹ The concept of law which allows the invalidity of law to be distinguished from its violation, enables us to see the complexity and variety of these separate issues' (Hart, 1955, p. 109).

Third, people's actual food consumption may fall below the entitlements for a variety of other reasons, such as ignorance of fixed food habits, or apathy.¹¹ In concentrating on entitlement something of the total reality is obviously neglected in our approach, and the question is: how important are these ignored elements and how much of a difference is made by this neglect?

Finally, the entitlement approach focuses on starvation, which has to be distinguished from famine mortality, since many of the famine deaths—in some cases *most* of them—are caused by epidemics, which have patterns of their own.¹² The epidemics are, of course, induced partly by starvation but also by other famine characteristics, e.g. population movement, breakdown of sanitary facilities.

5.4 DIRECT AND TRADE ENTITLEMENT FAILURES

Consider occupation group j , characterized as having only commodity j to sell or directly consume. Let q_j be the amount of commodity j each member of group j can sell or consume, and let the price of commodity j be p_j . The price of food per unit is p_f . The maximum food entitlement of group j is F_j , given by $q_j p_j / p_f$, where a_j is occupation j 's food exchange rate (p_j / p_f).

Commodity j may or may not be a *produced* commodity. The commodity that a labourer has to sell is labour power. It is the means of survival, just as commodities in the shape of baskets of produce are the means of survival of the basket-maker and the grower, respectively.¹³

A special case arises when the occupation consists of being producer of food, say rice, which is also what members of the

occupation live on. In this case $p_j = p_f$, and $a_j = 1$. Thus $F_j = q_j$.¹⁴

It is worth emphasizing that this drastically simple modelling of reality makes sense only in helping us to focus on some important parameters of famine analysis; it does not compete with the more general structure outlined earlier (and more formally in Appendix A). Furthermore, these simplifications will be grossly misleading in some contexts, for example in analysing entitlements in an industrialized economy, because of the importance of raw materials, intermediate products, asset holdings, etc. Even in applying this type of structure to analyse famines in developing countries, care is needed that the distortions are not too great.

For any group j to start starving *because of* an entitlement failure, F_j must decline, since it represents the *maximum* food entitlement. F_j can fall either because one has produced less food for own consumption, or because one can obtain less food through trade by exchanging one's commodity for food. The former will be called a 'direct entitlement failure', and the latter a 'trade entitlement failure'. The former can arise for food-producing groups, while the latter can occur for others (i.e. for those who sell their commodities to buy food), because of a fall in q_j . Such a fall in q_j can occur either owing to an autonomous production decline (e.g. a cash crop being destroyed by drought), or owing to insufficiency of demand (e.g. a producer being involuntarily unemployed, or a basket-maker being down the output as the demand for baskets slackens).

It is, in fact, possible for a group to suffer both direct entitlement failure and trade entitlement failure, since the group can produce a commodity that is both directly consumed and exchanged for some other food. For example, the Ethiopian nomad both eats the animal products directly and also animals to buy foodgrains (thereby making a net gain in foodgrains), on which he is habitually dependent.¹⁵ Similarly, a fisherman does consume some fish, though for his food he is dependent on grain-calories which he obtains at a favourable calorie exchange rate by selling fish—a luxury food

¹¹ Also, people sometimes choose to starve rather than sell their productive assets (Jodha, 1975, for some evidence of this in Indian famines), and this issue can be accommodated in the entitlement approach using a relatively long-run formula (taking note of future entitlements). There is also some tendency for asset market collapse in famine situations, making the reward from asset sales rather puny.

¹² See Appendix D for a study of the pattern of mortality in the Great Bengal Famine. See also McAlpin (1976).

¹³ In general, it may be necessary to associate several different commodities, rather than one, with the same occupation, but there is not much difficulty in redefining q_j appropriately.

¹⁴ Given the selective nature of calamities such as floods and droughts, affecting a group but not another, it will be sometimes convenient to partition the occupation/ j into number of subgroups (f, i) for famine analysis. With $q_{f,i}$ the food grown by subgroup (f, i), we have: $F_{f,i} = q_{f,i}$.

¹⁵ See Chapter 7.

¹⁶ See Chapter 6.