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CULTURAL INDICATORS
OF WELL-BEING

SOME CONCEPTUAL ISSUES

by
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OF WELL-BEING
SOME CONCEPTUAL ISSUES**

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Foreword on Culture and Development

Culture is both the context for development as well as the missing factor in policies for development. Although such interactions have long been recognized as essential, there has been no worldwide analysis in this field on which new policies could be based. The independent World Commission on Culture and Development (WCCD) was therefore established jointly by UNESCO and the United Nations in December 1992 to prepare a policy-oriented report on the interactions of culture and development.

The Commission, composed of distinguished specialists from all regions of the world and presided by Javier Pérez de Cuéllar, held a series of consultations with scholars, policy makers, artists and NGO activists on specific regional perspectives and concerns. The ideas and data gathered during this process have provided new and powerful insights into the relationship between culture and development worldwide. **Our Creative Diversity**, the report of the Commission presented to the General Conference of UNESCO and the General Assembly of the United Nations in 1995, recommended that an "annual Report on Culture and Development be published as an independent statement addressed to policy makers and other interested parties".

As highlighted in **Our Creative Diversity**, economic, governance and social activities are deeply embedded in the value systems and practices of societies. Their impact on the form and content of development is pervasive and profound. There is an urgent need to analyse and monitor the evolution of interactions such as: economic growth, culture and globalization; ethics, democracy and development objectives; ethnic conflicts, indigenous peoples and the rights of minorities; environment and inter-generational ethics; values, customs and gender; culture and the growth of cities; and culture and the information highway.

The preparation of a World Culture Report will open up a new field in analytical and quantitative thinking on the relationship between culture and development while providing scientific and creative inputs that will inform policy makers. This requires that tasks of an exploratory nature, both conceptually and in terms of creating quantitative indicators on culture and development, be combined with the wide-ranging collection of existing data and statistics on this theme.

For this reason, the close collaboration of multi-disciplinary agencies, such as UNESCO and UNRISD, is crucial. The joint UNRISD-UNESCO series of Occasional Papers on Culture and Development is a first step in facilitating and catalyzing an international debate on culture and development based on high-quality research. In this, the second paper in the series, the author considers some conceptual issues involved in constructing cultural indicators. To do so, he argues that well-being can be understood in terms of what Amartya Sen has called "functionings" – the

"doings" and "beings" that people value. The author is Professor of Economics at the University of California, Riverside.

A World Culture Report that takes an attractive and innovative approach to the quantification of crucial cultural phenomena can have profound implications for global development and international peace, security and well-being. Quantitative indicators in this area deserve greater attention at all levels of development action, for they can contribute to the dissemination throughout the world of a message of respect for creative diversity, equity and peace.

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March 1997

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1. Introduction¹

The purpose of this paper is to consider some conceptual issues involved in the construction of cultural indicators of human development. Following publication of **Our Creative Diversity**, the important report of the World Commission on Culture and Development (1995), a number of ideas regarding cultural statistics and indicators were discussed in the UNESCO Workshop on Cultural Indicators of Development held in January 1996.² In this paper, I have sought to pursue a little further some of these ideas and to give them a unified structure by putting them in the analytical framework provided by Sen's (1985, 1987) work on the standard of living. It is my hope that some of the issues will become a little clearer when we view the project from this perspective.

The plan of the paper is as follows. In Section 2, I shall try to clarify the notion of cultural indicators of human development. I argue that human development or well-being should be interpreted in terms of what Sen (1987) called "functionings", and that indicators of human development should be viewed as measures of the different functionings that we value. Cultural indicators are then defined as those indicators of human development which seek to measure the intellectual, aesthetic, social and political functionings – but not the physical functionings such as life expectancy, adequate nourishment, etc. In Section 3, I discuss two distinct ways in which we can seek to implement Sen's functionings approach in the assessment of social well-being. One approach, which is in conformity with the standard theory of welfare economics, seeks first to assess the well-being levels of individuals and then to derive social well-being from the individual well-being levels. While analytically appealing, this approach turns out to be impracticable given the limitations of the data that are likely to be available. Also, while the approach allows us to construct an index of social well-being, by itself, it does not help us to construct separate indicators to capture the different dimensions of social well-being. The second approach seeks to assess the social achievement for each functioning separately (which is more in line with our objective of constructing cultural indicators of social well-being), and then proceeds to assess social well-being on the basis of social achievement in terms of the different functionings. Given certain assumptions, this approach avoids the problem relating to data that we face in the first approach, but it suffers from certain intuitive difficulties of its own. Despite these difficulties, I argue that if we want to construct separate indicators for different dimensions of social well-being (with cultural indicators of social well-being capturing one such dimension), we must pursue the second approach. In Section 4, I discuss some details regarding the construction of specific indicators and the issue of aggregating them.

¹ I am grateful to Achin Chakravarty, Indraneel Dasgupta, Keith Griffin and Craig Gundersen for numerous helpful discussions over the years. In particular, without the generous help and encouragement of Keith Griffin, this paper would not have been written.

² The report of this workshop has been published as **Towards a World Report on Culture and Development: Constructing Cultural Statistics and Indicators**, UNRISD-UNESCO Occasional Paper No. 1, UNRISD, Geneva and UNESCO, Paris, 1997.

2. Culture and Human Development

Before cultural indicators of human development can be constructed, certain basic conceptual and terminological issues need to be clarified. First, it is necessary to be clear about what exactly we mean by indicators of human development. Second, we need to decide which of these indicators can meaningfully be put in the category of cultural indicators.

A. Human development

There can be various reasons why one may try to construct an indicator. For example, we may be interested in analysing the link between the economic prosperity of a society and the political system in the country. In that case, we may construct an indicator of the degree of democracy or authoritarianism in the political system and then observe how this indicator behaves as the level of economic prosperity changes. The indicator here is basically descriptive in nature and is used for the positive (i.e., non-normative) purpose of exploring the causal links that may exist between two very different aspects – economic development and political institutions – of a society. On the other hand, an indicator may have an “evaluative” purpose. Thus, one may construct an indicator that will evaluate the artistic and intellectual achievements of two different societies, so that, on the basis of that indicator, one could say that society A has attained a higher level of intellectual and artistic development than society B. Alternatively, the evaluative purpose may be to rank different countries – or the same country at different points in time – in terms of the overall levels of well-being achieved by these societies. Yet another evaluative purpose may be to capture not the overall well-being of societies but only their achievements in terms of specified ends, which may constitute components of overall social well-being.

In the discussion that follows, I shall focus exclusively on the evaluative purpose. Every evaluation, of course, involves some normative criterion. The normative criterion that I shall consider is based on the notion of human well-being. Thus, I shall assume in constructing the indicators that their purpose is to measure the achievements of a society in terms of ends that are believed to be direct components of human well-being. One can, of course, think of other normative bases for judging different aspects of life, especially those aspects which are usually associated with the arts and letters. For example, one may want to say that the tradition of music in one society is, according to some aesthetic norms, more developed than the musical tradition in another society, or that the paintings in one historical era represent a higher level of artistic achievement than the paintings in another historical era, and so on. However, I presume that we are not concerned with such aesthetic judgements, and that, instead, we are concerned with judgements regarding the well-being of people. Thus, the notion of well-being is the conceptual basis of our exercise, and the economic, social, political, intellectual and aesthetic factors are of interest to us only to the extent that they constitute different dimensions of the same basic notion of well-being.

B. Well-being and functionings

If well-being is to provide the conceptual basis of our evaluative exercise, then the question naturally arises as to the substantive content of the notion of well-being. Traditionally, economists have visualized an individual's well-being as happiness or desire fulfilment, the command over commodities being the means through which such happiness or desire fulfilment is achieved. This conception of an individual's well-being as happiness or desire fulfilment has been the target of searching criticism by Sen (1985, 1987). Sen's arguments point to the need for replacing happiness or desire fulfilment by a notion of well-being that is more "objective" and less affected by the eccentricities of the individual's psychological features. Sen has suggested that the notion of well-being should be interpreted in terms of functionings, functionings being the "doings" and "beings" that people value, such as adequate nourishment, living in a society without feeling ashamed of one's station in life, physical security, and so on. Further, Sen has suggested that not only is the achieved bundle of functionings a determinant of an individual's well-being, but the individual's well-being also depends on his or her freedom as reflected in his or her opportunity set, that is, the set of all the functioning bundles available to the individual.

Sen's approach provides a convenient analytical basis for indicators of the type in which we are interested. Following Sen, I assume that the well-being of an individual depends on her or his achieved functioning bundle (for reasons that I explain later, I do not follow Sen's suggestion for introducing the individual's opportunity set as a determinant of well-being). What are the functionings - the "beings" and "doings" - that people consider valuable? Can one construct a list of functionings that would be agreed upon by people across cultures as legitimate ends of human life? There are two issues here. First, we need to specify the functionings which, we believe, constitute the fundamental goals of human life. Second, to handle comparisons where different functionings yield conflicting rankings of the situations being compared, we need some aggregation procedure to arrive at a single ranking, in terms of well-being, of the alternative situations. The first task is likely to be much easier than the second: there is likely to be much more agreement about which functionings are valuable (that is, which functionings should have positive weights in assessing the well-being of an individual) than about the relative weights to be attached to the different functionings in assessing well-being.

It may be convenient to classify the functionings of an individual into three categories: (1) physical; (2) political and social; and (3) intellectual and aesthetic. Some of the important functionings in these categories are:

(1) Physical functionings

- (1a) expected length of life;
- (1b) adequate nourishment;
- (1c) shelter from the elements;
- (1d) absence of morbidity.

(2) Political and social functionings

- (2a) personal security (in particular, security from invasive actions by the state and other agents);
- (2b) participation in communal and political life;
- (2c) immunity from discrimination on the ground of race, gender, age or sexual orientation;
- (2d) being able to live without shame about one's position in society.

(3) Intellectual and aesthetic functionings

- (3a) having the intellectual ability to handle problems of life;
- (3b) intellectual fulfilment through contribution to human knowledge;
- (3c) aesthetic fulfilment through the expression of creative faculties or through participation in an aesthetic event.

The list above is meant to be only illustrative; it is not intended to be a comprehensive list of functionings that we may consider valuable. However, if we approach the issue of human development through the functionings approach of Sen, then indicators of human development will, essentially, be indicators of a society's success in securing, for its members, valued functionings of the type listed above. Our search for cultural indicators is therefore a search for indices of a society's achievements in terms of a specific subset of the set of all valued functionings. Below I shall take up the question of what this subset should be. Meanwhile, it may be worth noting several methodological aspects regarding the indicators of human development outlined above.

First, note that here we are concerned with measuring attributes which are perceived to be valuable in themselves as essential components of human well-being, rather than as instruments for achieving some other end. No doubt, for any functioning defined in this fashion, we can think of numerous factors that affect it either favourably or unfavourably. However, what we are seeking to capture are not the causal factors that explain the levels of a society's achievements in terms of the relevant functionings, but these achievement levels themselves. Thus, the extent of ethnic or religious diversity in a society may affect its well-being in so far as it may contribute to the intellectual or artistic creativity of the people in the society (by the same token, ethnic and religious diversity may also give rise to conflicts that may destroy intellectual and artistic creativity). Such creativity is one of the functionings that we should seek to capture through our indicators. But, it seems to me that ethnic diversity cannot be considered to be an end itself, and should not be included among indicators of human development in the functionings approach to such indicators.

Second, the classification of functionings into different categories (physical, political, aesthetic, etc.) that I mentioned above is intended to be a classification of the goals of human life based on the intuitive nature of such goals. It is not a classification based on the nature of the causal

factors that affect the achievements in terms of these functionings. An example may clarify the point. The intellectual achievements of a child in school may be affected in very important ways by his or her physical health, but it would be rather awkward and unintuitive to call education a physical functioning because of this.

Third, there is no presumption that a particular activity cannot contribute to functionings in more than one of the categories. For example, choir singing enables one to participate in the life of the community; at the same time it is also a creative activity that contributes to one's aesthetic life. This just goes to show that certain activities promote more than one type of functioning. Fourth, many of the functionings are abstract and do not lend themselves to direct measurement at the present state of our knowledge. For example, while "the expression of one's creative faculties" may be a very clear intuitive notion, direct measurement of it may be extremely difficult. Inevitably, in all such cases, we may have to fall back on "proxies" or "surrogates" to measure achievement in terms of any such functioning.

Lastly, the boundaries of some of these categories of functionings are often fuzzy: sometimes one may come across a functioning that one can, without too much conceptual distortion, classify in any one of several categories. Thus, one can put personal security either in the category of physical functionings or in the category of social and political functionings. Despite such ambiguity, I believe that the general distinction between the three categories is fairly clear, and the classificatory scheme is useful.

C. The notion of culture: The broad versus the narrow definition

What are the functionings that come, or should come, in the category of cultural functionings? To some extent, this will depend on one's definition of culture. It is possible to define culture very broadly to include virtually every aspect of the social, political, intellectual, religious and artistic life of a people. Thus, one definition of culture given by the **Concise Oxford Dictionary** (1990) is that culture refers to "the customs, civilization and achievements of a particular time or people". This was the view of culture taken in the classic work of Tylor (1871), who regarded culture as including "knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of the society". In contrast to such an all-embracing notion of culture, there is also another, equally widely used, notion of culture that focuses only on the intellectual and aesthetic achievements of a people. Thus, the same dictionary gives another definition of culture as "the arts and other manifestations of human intellectual achievement regarded collectively". The issue of whether we should use the term "culture" in the broad sense or in the narrow sense is, to some extent, a matter of choice. The concerns of the World Commission on Culture and Development, as reflected in **Our Creative Diversity**, certainly go far beyond culture as "the arts and other manifestations of human intellectual development". However, the question that arises here is how broad we can make the scope of cultural indicators without making the set of cultural indicators identical with the set of indicators of human development in general and without using the term "cultural indicators" in too unconventional a

fashion. Let me illustrate the point by raising a specific issue. Consider the three categories of functionings discussed above. The narrow definition of culture will confine us only to the intellectual and aesthetic functionings. Under a somewhat broader interpretation of culture, the set of cultural indicators can be taken to be the set of indicators that seek to capture what I called social and political functionings in addition to the intellectual and aesthetic functionings. Should we go further and interpret the notion of cultural indicators in an even broader fashion so as to include indices of "physical" functionings such as life expectancy, adequate nourishment and absence of morbidity? I feel that we should not do so. It is true that social, political and intellectual factors affect the individual's achievement of physical functionings, just as physical factors affect the individual's achievement of social, political, intellectual and aesthetic functionings. Thus "cultural" attitudes may determine the diet of people which, in turn, may significantly affect the level of nourishment (and, possibly, life expectancy); and recurring illnesses may seriously affect the schooling of children and, consequently, their intellectual development. But these facts, by themselves, do not seem to justify the inclusion of indices of life expectancy and absence of morbidity in the category of cultural indicators. The inclusion of education in the category of "physical" functionings on the ground that education enables people to avoid many illnesses would seem to be equally anomalous. After all, in a "general equilibrium" system, most things affect most other things directly or indirectly. It would, therefore, seem more appropriate to base the classification of indicators of well-being on the intuitive nature of the functionings that they seek to capture rather than on the nature of the causal factors that affect individual achievements with respect to these different functionings. In view of this, I would suggest that we restrict the use of the term "cultural indicators" to the set of indicators that seek to capture achievements only with respect to functionings in my categories 2 and 3 (namely political, social, intellectual and aesthetic functionings) but not achievements with respect to what I called physical functionings. I shall base my subsequent analysis on this particular conception of cultural indicators, though many of the points that I raise are also applicable to wider or narrower conceptions of the class of cultural indicators.

3. Cultural Indicators of Individual and Social Well-Being

A. Individual well-being and social well-being

Suppose we have a given society of n individuals, 1, ..., n . Traditionally, in welfare economics, the well-being of a given society is assumed to be determined by the levels of well-being of the individuals constituting the society. Therefore, in assessing the well-being of this society analytically, it seems attractive to proceed in three distinct steps:

(1) specification of the individual well-being functions:

$$W^i = W^i(x_i) \quad (i = 1, \dots, n) \quad \dots (3.1)$$

where x_i denotes i 's achieved functioning bundle;

(2) specification of the social well-being function, which determines social well-being as a function of the levels of individual well-being:

$$W = W(W^1(x_1), \dots, W^n(x_n)) \quad \dots (3.2)$$

(3) given information about x_i , for every individual i in the society, the actual computation of the level of well-being W^i for every individual i and then the level of social well-being, W .

If we assume that the social well-being function W is symmetric in its arguments, W^1, \dots, W^n (such assumption of symmetry or anonymity is natural in our context), then to implement step 3 above, we do not really need to know the functioning vector of each specific individual. It would be enough if we knew, for each possible functioning vector, the fraction of the population that achieved that functioning bundle. Unfortunately, we are unlikely to have this type of data. Instead, what we are likely to have is information about the fraction of the population that achieved a specific level of any given functioning, and such data cannot be used for the purpose of step 3. An example may be helpful here. Suppose there are only two functionings: intellectual achievement, indicated by the number of books read; and the extent of aesthetic fulfilment, given by the number of concerts attended. We may know that 90 per cent of the population has read 10 books each in a given year, and 10 per cent of the population has read no books. Also, we may know that 20 per cent of the population attended five concerts each in the same year, and 80 per cent of the population did not go to any concerts. However, we may not have any data about what fraction of the population read 10 books and went to five concerts during the year, what fraction of the population did not read any books and did not go to any concert during the year, and so on. Yet, it is the latter type of data that we need (even when the social well-being function satisfies the assumption of "anonymity") to calculate the level of social well-being according to the procedure outlined earlier.

Given this serious practical difficulty, it does not seem feasible to estimate the levels of individual well-being first, and then to assess social well-being on the basis of the information regarding individual well-being levels. Besides this practical difficulty, in our context, there is another problem with this approach: it has no place for the construction of separate indicators to capture different dimensions of social well-being. While it allows us to distinguish different dimensions (cultural, physical and so on) of an individual's well-being, these different dimensions are aggregated at the level of the individual so as to arrive at well-being levels of different individuals. At the level of the society, what we aggregate in this approach are the individual well-being levels; the distinction between the different "dimensions" or different types of functionings is already lost

by the time we come to the stage of assessing social well-being on the basis of individual well-being levels. Thus, while this approach has its roots in the well-established tradition of welfare economics and is conceptually most appropriate when we are interested in constructing an overall index of the well-being of a society, it does not serve our specific purpose of constructing cultural indicators of social well-being.

B. An alternative route

One way of avoiding the difficulties discussed above may be to take the following alternative route. Here we proceed through the following steps.

(1) First, for each separate functioning, we assess the social achievement on the basis of individual achievements with respect to that functioning.

(2) Next, we aggregate social achievements with respect to the different functionings so as to arrive at an assessment of overall social well-being.

Let there be m different functionings which are considered relevant for the well-being of individuals. For each functioning k ($k = 1, \dots, m$), let r_k denote the vector (x_{1k}, \dots, x_{nk}) , where x_{ik} denotes individual i 's achieved level of functioning k . Then, using (3.2), we can write social well-being W as a function of the vectors r_k ($k = 1, \dots, m$):

$$W = W^+(r_1, \dots, r_m) \quad \dots (3.3)$$

Suppose functionings $1, 2, \dots, g$ ($g < m$) are the social, political, aesthetic and intellectual functionings, which, I have proposed, should be included within the scope of "culture"; and, further, suppose functionings $g + 1, \dots, m$ are what I have called the physical functionings. Now, I assume that W^+ has the following form:

$$W^+(r_1, \dots, r_m) = F(z_1(r_1), \dots, z_g(r_g), z_{g+1}(r_{g+1}), \dots, z_m(r_m)) \quad \dots (3.4)$$

where, for each $k \in \{1, \dots, m\}$, z_k is a real-valued function of r_k , and $z_k = z_k(r_k)$ is interpreted as the level of social achievement with respect to functioning k . This is a strong assumption. However, given this assumption, the framework, where one first constructs separate indicators to indicate the levels of social achievements with respect to different functionings and then uses these indicators for the assessment of overall social well-being, can be reconciled with the standard individualistic approach of welfare economics, where social well-being is regarded as being determined by the well-being levels of the individuals constituting the society. Further, if one assumes that, for every $k \in \{1, 2, \dots, m\}$, the function z_k satisfies the property of "anonymity" (so that a permutation of the levels of achievement of the individuals in terms of the k -th functioning leaves unchanged the value of z_k), then the problem of data availability that I

mentioned earlier will not arise. This is because if z_k satisfies anonymity, then all that matters for the value of z_k is the number of individuals corresponding to each level of the k -th functioning rather than the identity of these individuals. In what follows, I shall assume that W^+ has the form given by (3.4) so that social well-being W is given by

$$W = F(z_1(r_1), \dots, z_g(r_g), z_{g+1}(r_{g+1}), \dots, z_m(r_m)) \quad \dots (3.5)$$

(where, for every $k \in \{1, \dots, m\}$, z_k is interpreted as above); and I shall further assume that, for every $k \in \{1, \dots, m\}$, z_k satisfies anonymity. However, even though these assumptions provide a link between the conventional analytical framework of welfare economics and the two-stage procedure for assessing social well-being outlined at the beginning of this sub-section, and allow us to bypass the problem of data availability discussed earlier, they can give rise to certain intuitive difficulties that may be noted here.

Consider a given functioning k . Clearly, in assessing the society's achievement, z_k , on the basis of $r_k = (x_{1k}, \dots, x_{nk})$, we need to bring in some consideration of inequality and/or poverty reflected in the individual achievements x_{ik} ($i = 1, \dots, n$). For the sake of simplicity, assume that there are only two functionings, intellectual development (functioning 1) and aesthetic pleasure (functioning 2), and only two individuals in the society, 1 and 2. Assume that z_1 (i.e., social achievement in terms of intellectual development) depends only on the mean $(x_{11} + x_{21})/2$, where x_{i1} ($i = 1, 2$) represents i 's intellectual achievement as measured by the number of books read by i over the relevant time period, and also the inequality in the individual intellectual developments reflected in x_{11} and x_{21} . Similarly, assume that z_2 , the social achievement in terms of aesthetic pleasure, depends only on the mean $(x_{12} + x_{22})/2$, where x_{i2} ($i = 1, 2$) denotes the number of concerts attended by i , and also the degree of inequality reflected in x_{12} and x_{22} . It will be tempting to conclude that, if the two means remain the same, but the degree of inequality increases for each of the two functionings, then z_1 as well as z_2 decreases and hence W itself decreases. However, this can involve a serious conceptual problem. Suppose, to start with, $[x_{11} > x_{21}]$ and $[x_{12} < x_{22}]$, and then x_{11} increases by d ; x_{21} decreases by d ; x_{12} decreases by d' and x_{22} increases by d' . It is not clear that, intuitively, one should necessarily consider this as causing a decline in the level of social well-being. Even though the extent of inequality is clearly increasing for each functioning, it is perfectly possible that the level of individual well-being may be exactly the same for each individual, and, intuitively, there is no rise in overall inequality. Thus, consideration of inequality by each functioning separately, though informative in itself, may be misleading if what one is trying to get at is the inequality in the overall well-being levels of the two individuals. Intuitively, it would seem that it is inequality in the overall well-being levels of the individuals, rather than the degrees of inequality corresponding to the different functionings, which is important for the assessment of social well-being.

C. Freedom

Besides the actually achieved functioning bundle of an individual, the individual's freedom, as reflected in the opportunity set (that is, the set of functioning bundles available to him or her) is considered by Sen (1987) to be an essential ingredient of the well-being of the individual. The individual's opportunity set is determined by a complex set of restrictions, some imposed by the resource constraints of the society, some by the general way in which the society is organized and some by the political institutions of the society. Also, the functioning bundles which constitute elements of this set have non-cultural as well as cultural dimensions. Therefore, it is not clear to me that, when freedom is conceived in terms of the set of available functioning bundles, it is necessarily a matter of "culture". Also, while it seems intuitively attractive to visualize an individual's freedom as being reflected in his or her opportunity set defined as the available set of functioning bundles, such a conception seems to raise some difficult issues in a general equilibrium framework (see Basu, 1987 and Pattanaik, 1994), which are yet to be clarified. In any case, even if one decides to assess an individual's freedom on the basis of the set of functioning bundles available to the individual, one would need a formidable amount of data to map out the set of all functioning bundles available to an individual in any given situation. It is highly unlikely that one would have such data.

However, this does not imply that, in applied work of the type under consideration, we must eschew the notion of individual freedom until all the analytical issues and practical data problems are sorted out. One can capture at least those aspects of freedom in a society which are typically put in the category of "negative freedom". Freedom of thought and expression, freedom to participate in the political process, immunity from invasive actions of the state, and so on, all fall into this category, and while finding indices for these may not be easy, it would be a much more tractable problem than determining the set of functioning bundles available to an individual. One last point may be noted. When an individual's freedom is conceived in terms of the set of all functioning bundles available to the individual, as in Sen (1987), one cannot regard freedom itself as one of the functionings. However, if, for whatever reason, we give up that conception, and confine ourselves to the negative freedoms, then there is no compelling conceptual reason for not treating such negative freedoms as one of the functionings. Following this reasoning, I shall consider negative freedoms to be one of the political and social functionings for which we require an indicator.

4. The Construction of Indicators

The evaluative framework based on functionings rather than commodities has one major advantage in so far as it enables us to abstract, at least conceptually, from a large number of details and to concentrate on a relatively small number of ends (the functionings). Even then, there are likely to be many functionings that, in principle, one would like to take into account. In practice, if the exercise is to remain tractable, we need to restrict our attention to a small number of functionings that we consider to be crucial and that we can hope to capture through suitable indicators.

What are the indicators that one should choose for each of the two categories of functionings (namely, social and political functionings including negative freedom, and intellectual and aesthetic functionings) that, I proposed, we should consider in constructing cultural indicators of human development? This is an issue that needs much detailed discussion and even after prolonged discussion there may be irreconcilable divergence of opinions. However, I shall make some very tentative suggestions at this stage.

A. Indicators of intellectual and aesthetic functionings

First, consider the category of intellectual and aesthetic functionings. One possibility is to concentrate on the following basic indicators: (1) an index of education; (2) an index of research; (3) an index of the production of new books, journals, newspapers and so forth; (4) an index of the production of music, dancing, plays, operas, films, television programmes, paintings and so on; (5) an index of the consumption of books, newspapers and journals; and (6) an index of the consumption of music, dancing, plays, operas, films, television programmes, videos, museums, etc. All these indices are concerned with intellectual and aesthetic functionings, but it will be difficult to identify many of these indices as indices of intellectual functionings only or as indices of aesthetic functionings only. For example, consider the production of new books, journals and newspapers. Since books and journals can represent either literary outputs or the furthering of knowledge, it is not clear that this index reflects an "aesthetic" functioning only or an "intellectual" functioning only. To the extent that they represent "furthering of knowledge", they should really be incorporated in the index for research. However, it is difficult to see how to separate these two aspects in practice.

I would like to note several points in this connection. First, whatever indices we construct for intellectual and aesthetic functionings, they should seek to capture, as far as possible, the production as well as the consumption of aesthetic and intellectual products. Exclusive emphasis on consumption and failure to incorporate the production aspect will ignore the important dimension of creativity.

Second, the indicators must capture the wide range of cultural activities that often take place outside the organized "cultural market" (e.g. dancing in tribal societies, choir music in churches, ritualistic wall paintings by housewives in rural India).

Third, in considering the various artistic products, what we should be concerned with is the contribution their consumption and production make to well-being, rather than their value as measured by some aesthetic canons. It is possible to argue that a piece of classical music is, in some sense, a more sophisticated aesthetic product than the music of a tribal flautist. However, our concern here is not with aesthetic superiority or inferiority, but with well-being – and the contribution of the music of the tribal flautist to well-being may not be any less than the contribution of classical music in a formal concert.

Fourth, in the Workshop on Cultural Indicators of Development organized by UNESCO in January 1996, Paul Streeten introduced the idea of using time as the basis for several indicators. The analytical implications of the fact that the consumption (as well as production) of most aesthetic products needs time have not yet been explored adequately in welfare economics. However, Streeten's innovative idea has much intuitive plausibility, and I would like to suggest time as the informational basis of several of the indices. Thus, the index for the consumption of books, newspapers and journals can be based on the time spent on the consumption of these products, and similarly for the index for the consumption of music, films, operas and so on. Also, education can be measured in terms of the average number of years spent in schools and colleges.

Finally, in constructing these indicators, we should not concentrate only on an average of the achievements, in terms of the relevant attribute, of the individuals in the society. Unless data constraints make it impossible, we should also incorporate into the index some consideration of "poverty" in terms of the attribute under consideration. I shall illustrate the point with an example. Consider the index for education. There is no reason why we should confine this index to the consideration of the extent of literacy only. I believe that the average number of years spent in schools and colleges is a more appropriate index. However, while the average number of years spent in schools and colleges may constitute a convenient starting point, in constructing our index for education we should adjust the average number of years of education to take into account the special concern attached to "educational poverty", as reflected in illiteracy. Similarly, in constructing a time-based indicator of aesthetic functionings, one should make adjustments to take into account the fraction of the population that spends less than some stipulated minimum amount of time for the relevant activities (the basic point remains relevant even when the indicator is not a time-based indicator).

B. Indicators of social and political functionings

One can think of numerous indicators for social and political functionings. However, it may be prudent to concentrate on a few indicators directly reflecting some of the basic functionings here rather than trying to cover too broad an area. I would like to single out three areas of significance:

(1) violence; (2) discrimination; and (3) political freedom, especially freedom of thought and expression and freedom to undertake political activities. We should have an index for the extent of violence of all types (including ethnic violence and violent crimes). We should also have a measure of discrimination based on gender, race, religion and so on, and a measure of political freedom.

Of these three aspects, political freedom is likely to be the most elusive and also the most controversial. In constructing indicators in this area, we should rely, as far as possible, on quantitative information (such as the number of political prisoners, the incidence of state-induced violence against forces of opposition, the variety of recognized political parties, etc.) and judgements that can be explicitly stated in terms of "precise" criteria.

5. Aggregation of Indicators

Since we shall have many cultural indicators, there arises the question of whether we should aggregate them in some way. Of course, aggregation need not be an all-or-nothing exercise. Between no aggregation, and full aggregation yielding a single composite indicator, we can have various degrees of partial aggregation where subgroups of cultural indicators are aggregated to yield several composite indicators.

Even without any aggregation, the cultural indicators will be useful in many ways, but the information conveyed by a large number of indices may lack intuitive focus and can often be confusing. I believe that our real choice is between partial aggregation with a small number of composite indicators and full aggregation with a single composite indicator. I believe that we should opt for the latter.

One objection sometimes raised against full aggregation is that it does not make sense to aggregate very disparate things such as political freedoms and the consumption of music, films, etc. While it is true that full aggregation will involve combining together very disparate dimensions, such combination is not arbitrary or devoid of intuition since the notion of well-being provides the unifying analytical principle that justifies such aggregation. To see this, let us assume that the function F in (3.5) is such that we can rewrite (3.5) as

$$W = G(a) + H(b) \quad \dots (4.1)$$

where $a = (z_1, \dots, z_g)$ is the vector of social achievement levels with respect to the cultural functionings and $b = (z_{g+1}, \dots, z_m)$ is the vector of social achievement levels with respect to non-cultural or physical functionings. Let d be the vector of variables that we choose to focus on in seeking to capture, directly or indirectly, the vector, a , of social achievements with respect to the "cultural" functionings (the number of components in d need not be the same as the number of

components in a). Then, essentially, we are claiming that a is determined by d . In that case, we can write (4.1) as:

$$W = J(d) + H(b) \quad \dots (4.2)$$

Then full aggregation can be viewed as an exercise where given d , we seek to determine $J(d)$, that is, the contribution of d to social well-being.

Another objection raised against full aggregation arises from the belief that aggregation of indicators which are not strongly correlated is not useful. It is argued that, if the correlation between different indicators is low, as may be the case with cultural indicators, then one would like to know why, and therefore separate them. (On the other hand, in the presence of strong correlation between indicators, aggregation, it is argued, is superfluous, since, given such strong correlation, one can as well concentrate on only one of these indicators.) The point is valid when we are interested in finding out why some of the indicators have low or high values for a country, or, alternatively, when we are interested in knowing why some of the indicators are moving upwards or downwards. In such cases, if we do not keep the primary indicators separate and present only the composite indicator, then we may not even be able to see either the unusually high or low value of some primary indicator or the movement up or down in one of the primary indicators. However, in the context of the purely evaluative purpose of ranking countries on the basis their achievements with respect to cultural functionings (or, ranking alternative situations for the same country on the basis of its achievements with respect to such functionings), it is not clear that the lack of correlation between the primary indicators to be aggregated is problematic. For example, in the interpretation of the composite index in terms of well-being that I mentioned above, no intuitive difficulty would arise if two cultural indicators move sharply in opposite directions.

Every rule for aggregating cultural indicators must directly or indirectly introduce judgements regarding the relative importance of the different indicators. Of course, one could appeal simply to the dominance principle: "country A's achievement in terms of cultural functionings is higher than that of country B if A's achievement is at least as high as that of B for every indicator and strictly higher for some indicator". This would avoid any judgement about the relative importance of the different indicators. However, it is likely that for most pairs of countries, the dominance principle will fail to yield a ranking (see Chakravarty, 1995). Thus the ranking yielded by the dominance principle will be only a partial ordering, and to fill in the many gaps left by this non-controversial but rather ineffective criterion, we would have to resort to stronger rules.

The aggregation rule that we use should be based on clear and explicitly stated judgements. One can draw on utility theory and other areas for rules for aggregating cultural indicators. Such rules have already been applied in the related area of the measurement of the standard of living (see, for example, Chakravarty, 1995). This is perhaps not an appropriate occasion for a detailed discussion of the structure of different classes of plausible aggregation rules that we may use,

which can be taken up at a later stage. However, whatever aggregation rule we finally choose, it is inevitable that it will involve parameters the values of which will depend on ethical judgements. These judgements should be explicitly stated and sensitivity analysis should be carried out to test the robustness of our results to alterations in the values of the relevant parameters.

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