

Putt på omslagsbilde

WORLD INDICATORS PROGRAM
No. 2
MEASURING WORLD DEVELOPMENT

by

J.Galtung	A.Guha
M.Cifuentes	A.Wirak
A.Løvbræk	S.Sjølie

Professoratet i konflikt- og fredsforskning
Chair in Conflict and Peace Research

University of Oslo
P.O.Box 1070, Oslo 3

MEASURING WORLD DEVELOPMENT*

By

J. Galtung	A. Guha
M. Cifuentes	A. Wirak
A. Løvbræk	S. Sjølie

1. *The World Indicators Program: basic principles*
 2. *The value dimensions: needs and goals*
 3. *The indicators: a preliminary list*
-

1. *The World Indicators Program: basic principles*

The crisis in the leading socio-economic indicator, the *gross national product*, GNP - in absolute terms or per capita - is a reflection of the crisis in the leading countries on this indicator, and in the world as a whole. For a long time it has been painfully clear that as GNP grows, so does the gap between rich and poor countries, so does the gap within most countries (or at least, it does not decrease), and so do the general pollution and depletion of the environment. But one thing does not seem to grow, something that should be close to the purpose of it all: personal happiness, well-being, self-realization. Hence, as has been pointed out by many, we should at least also have indicators of disparities within and between countries, of what happens to the environment (the "gross national pollution"), of what actually happens to people (the "gross national happiness").

The World Indicators Program (WIP)¹ has such problems as its concern, among many others. But how does this program differ from other social indicators programs around the world - and they are very numerous indeed? What are the basic principles, what are the basic value-dimensions on which WIP wants to focus, what are the indicators? In the three sections of this paper answers to these questions will be attempted. It should be emphasized, however, that they are preliminary answers, guidelines rather than anything like firm doctrine, and will no doubt undergo many revisions as the program proceeds from exploratory work towards the collection of as valid and reliable indicators as possible in order to publish them at regular intervals, as a basis for social accounting, telling us not only where we stand but also in what direction we move.

We shall start with ten basic principles, usually formulating them positively rather than in the form of a polemic against others.

(1) *The program is world-oriented.* The 'society' to which these social indicators apply is the world community which obviously is not a society - having neither the institutions, nor the level of associative interdependence that we would normally expect in a society. Sociologically speaking, however, the world is a society: it is self-sufficient; capable of biological reproduction, economic sustenance and the production of its own culture.

The world's problem is not lack of autonomous production; in fact, as far as we know, there is no human environment outside our world. The problem is that the world is an overproducer relative to its resources, and this is where the lack of institutions capable of self-regulation enters the picture. Obviously, our indicators will have to reflect this aspect of the world community.

There are five levels of organization and analysis of the world community, representing progressive levels of analysis in the World Indicators Program. They are seen not as excluding each other but as adding to each other, in the order given below. And they all presuppose a zero level of analysis, of *nature*, of the carrying capacity of the biosphere.

First, there is the idea of *the world as a set of countries*, conceiving of each country as an independent unit of analysis. This approach dominates the social indicator analysis currently found, and results either in a focus on one's own country or on the establishment of comparable indicators and (regional or global) lists of countries compared on the same indicators. The statistics published by national statistical offices are of the first kind (possibly comparing such subdivisions inside the country as provinces, districts, etc.); the UN statistics (and such publications as the *World Handbook of Political and Social Indicators*) of the latter kind. To many this seems to be the end product of social indicator work; we would rather see it as the beginning. For this is only the *comparative stage* in a program towards world indicators, and it can be done in two ways: comparing all countries, or subdividing them into sets, comparing continents or countries with different economic systems, different levels of economic development, etc.

Second, there is the idea of *the world as a structure of countries*, conceiving of countries as interdependent units of analysis. The focus is no longer on what is the situation inside the countries, but on what countries do to each other. There are many examples of this: trade statistics, statistics on wars; in fact any kind of interaction statistics (interaction being positive or negative to either or both in its consequences). The problem is to do this in a systematic manner, not merely including any kind of transaction analysis because the data exist.

Again, this can be done in two ways: focussing on each country, individually (i.e. on whether it is economically dependent on exports, is independent, or depends on imports); or focussing on sets of countries, starting with dyads (pairs of countries, of which there are uncomfortably many, around 20.000), or on groups that are important units of structural analysis, e.g. the US with Latin America; the EC countries with Africa - at least south of Sahara - the Soviet Union with Eastern Europe; Japan with Southeast Asia. Or, what would be more systematic: starting with the top four, then adding all the countries in significant interaction with them, above a certain cut-off point. For all of them this would bring in more countries, for instance the whole CAP system - Caribbean, African, Pacific countries - in the case of the EC.² This is the *relational or structural stage* in a program towards world indicators. Unlike first level analysis the focus is no longer on whether the country is good for its citizens but on whether it is good for other countries and for the world as a whole.

Third, there is the idea of the world as neither a set nor a structure of *countries*, but of *the world as a set of other units of social organization*. At this point the analysis splits into many branches, depending on what type of units is added to the country/nation/state perspective - singly or combined in sets and groups - that dominates the first two levels. There may be said to be four types here:

- (a) *intergovernmental organizations*, starting with the UN and the Specialized Agencies, adding all kinds of IGOs;
- (b) *inter-nongovernmental organizations*, starting with the multinational corporations (MNCs) (some of them are governmental, though), adding all kinds of INGOs;
- (c) *transnational organizations* that link individuals rather than national units (governmental or non-governmental), nations that cut across states probably being the most important at present, but adding other TRANGOs³ like the women of the world;
- (d) *subnational units*, such as cities or districts, starting with the largest ones, adding others, including the organizations members of (a) and (b) above.

Again, there are two approaches; a *comparative approach* where their internal situation is listed and compared (e.g. in terms of

general participation in decision-making), and a *relational approach* where their interrelations are studied (what is the transaction patterns between IGOs, between INGOs, between TRANGOs (e.g. in terms of dominance relations); also doing the same for the sub-national units. Here is a problem: the city, for instance, as an actor at the domestic level and the structure of inter-city domestic interaction might be an important indicator at the first level of analysis. It is only to the extent that the city breaks out of the national confines and becomes a unit at the world level that it enters this third level analysis.⁴ Thus, what percentage of US presence at the world level is, in fact, New York and Washington presence? To what extent is world politics the politics of the capitals (economic and political) of the world? This is the *organization stage* in a program towards world indicators, and it would include the interrelation between the four types of organizations mentioned.

Fourth, there is the idea of the world as neither a set of countries nor of other units of social organization, but of *the world as a set of individual human beings*. "Ultimately the individual human being is the unit,"⁵ ultimately this is the approach that would give us the most human perspective on the world, avoiding such institutional abstractions as countries international organizations of the three kinds mentioned, or sub-national units. In this perspective one would ask the germane question: if the world were a society, what kind of society would that be? What would be the *distribution* on all kinds of variables (age, sex, habitat, profession, anything), what kind of *structure* would the world have, taken as a whole? What is the total disparity, the total fragmentation, not merely within countries and between countries, but in the whole world? This is the *individual stage* in a program towards world indicators.

Fifth, and something the reader no doubt has had in mind, and increasingly so: the interrelation between the four (or five when we include level zero, the constraints given by the biosphere) levels. There is no scarcity of problem formulations. Thus, what is the relation between the first and second levels: how does the resource power of a country (explored at the first level of analysis) relate dialectically to the structural power of a country (explored at the second level)?⁶ And what happens when we add the third level? After having conceived of the

world as a set of countries, in interaction, we superimpose on the picture the confusing web of IGO, INGO, TRANGO and sub-national unit relations. The problem then becomes: to what extent does this merely *reinforce* what we have already found at the second level (these units essentially being the carriers of inter-national interactions, e.g. the vehicles of international dominance); to what extent does it add something new, even something *counteracting* what is explored at the second level? In other words, we might look for some higher type of indicator here, viz., of the interaction effect between various levels of analysis, and that is not going to be easy. And it becomes even more complex when one shall try to see the individual level in the light of all the other three. At any rate, this is the *global stage* in a program towards world indicators.

It is hardly necessary to say that this adds up to a rather comprehensive program. So far our work has been confined to the first and second levels only, with some progress being made on either, particularly on the second level. The third level offers particular difficulties. The international organizations are by and large known and listed⁷ (except the more ephemeral TRANGOs), their internal properties to some extent known, but not so much their relations to each other, within and between different types. Each one offers a new perspective of the world: world politics seen as the result of IGO action, of INGO (particularly MNC) activities, as whites dominating non-whites, males dominating females, the middle-aged dominating the youth and the old (some typical TRANGO perspectives); as inter-city interaction leaving out the rest of mankind. Each perspective is incomplete, but so are indeed the perspectives offered by first and second level analysis only. At the present stage the most important seems to be to keep all these perspectives in mind, attacking analytical and data problems as the program proceeds.

(2) *The program uses the same values across levels.* This may seem to be a rather petty point, an outcome of a desire for simplicity and systematics only. The point is simply this: if, say, *equality* is considered a value at the domestic level, then it should also be considered a value at the world level, and one should try to use the same indicators. In other words, one should

learn to place the same normative requirements on the world as a community of countries as one would on the country as a society of human beings. If it is considered wrong for the top ten percent of a population to have more than ten times as much as the bottom ten percent, then the same might also apply to the world community of countries.

Hence, there has been an effort in the program to develop value-dimensions and indicators so as to capture what seems to be the major problem-formulations, issues, at the two levels. As will be shown in the third part of the paper, some of these value dimensions apply better to the domestic level, some are better at the global level - but when applied to the level to which they are not custom-tailored they always yield something new. For instance, it is today commonplace to analyze the international society in terms of *fragmentation*; the tendency for the system to be well connected at the top and kept apart (poor or no communications, little or no trade and so on) at the bottom. But this equally well applies to intra-country analysis. One may divide the country into districts and simply ask how the roads are running: what percentage of the total network runs from the capital to district capitals, from there to towns and from there to villages (or are roads that take off from such roads) - what percentage connects villages directly with each other, towns with each other, etc? Or, one may divide the country into associations and ask how much direct interaction there is between local branches and headquarters as opposed to how much there is among the local branches, directly.

What we want to avoid is the schizophrenia of treating the two levels as if they belong to entirely different worlds. They are both parts of our man-made environment, and we have a right, even a duty, to require the same of both - if for no other reason in order to be able to compare the two levels with each other and better identify countries that are good to their own people but bad to other countries, and vice versa.

(3) *The program is value-oriented.* It is openly, admittedly, unashamedly value-oriented; it is concerned with indicators of the good life, the good society, the good world. This raises two problems: what is the source of the values, where do we get them

from, so to speak; and what do we exclude when we put this emphasis on *values*. The first problem will be dealt with here, the second problem in the two subsequent sections because it splits into two parts: a rejection of indicators of theoretical *variables in general* (as opposed to indicators of values, means or ends), and a rejection of indicators of *means* (heterotelic values) as opposed to indicators of ends (autotelic values).

Basic in our approach to values is the distinction between *needs* and *goals*.⁹ This will be elaborated in the second section of this paper, where a distinction between (five) "fundamental" and (two) "almost-fundamental" needs will be made use of. Suffice it only to say here that there is probably a rather high consensus in the world about the fundamental needs since they can be seen as necessary conditions for the survival of the individual person as a *biological* being, and as a *human* being at that, able to relate to others symbolically. After this, however, the consensus breaks down and ideologies arise. Again, there may be a high level of consensus on which goals to include, but certainly not about priorities. Thus, very many may be in favor of such goals as *freedom*, *socio-economic growth* and *equality*, but liberals might put them in that order, marxists in the opposite order of priority, and they might not mean the same with these overused terms. A liberal of the more conservative variety would start with freedom (e.g. on the economic, political, and cultural markets), then see socio-economic growth as a consequence of that freedom, and finally proceed to equality (the truly conservative might leave that out). The marxist would argue that after this system has matured it is so full of contradictions that it is unable to solve its own problems and one has to proceed by introducing (if necessary by revolutionary means) a basic equality (viz., making everybody equal relative to the means of production), then engage in socio-economic growth but this time with priority to the fundamental needs of the masses, and then proceed to freedom (again, the more conservative among them might leave this out). Then there are other ideologies in the world, perhaps particularly in its Eastern part, putting more emphasis on *inner man*, on personal growth, on inner qualities, often being very silent on structure.¹⁰ Both types of conservatives, liberals and marxists, have a tendency to assume that this will come as an added bonanza when the structure has been perfected through their

recipes. Finally, there is the very important recent emphasis on the constraints set by nature, the idea that we live in a finite world.

Thus, there are at least four ideological trends on which to draw, and this program will not be wedded to any one of them. In a sense it will be *trans-ideological*, drawing on all four - and others if and when they can be identified and crystallized. "Trans-ideological", however, in no sense means neutral; there is nothing neutral in the commitment to these values. Rather, the ideologies are seen as expressions of what people of various persuasions try to achieve. We assume that each such ideological perspective is limited by the vantage point (a culture, an epoch, a region, a class) from which it emerged, fathoming only a sector of the possible goal-horizon of mankind. Nor do we necessarily believe that goals given low priority in different ideologies, even not mentioned at all, are necessarily rejected. Ideologies should rather be seen as concrete strategies in a given concrete situation, where the holders of the ideology may or may not be right in their priorities. In this sense WIP would actually be *a-ideological*. As such it does not tie itself to any single strategy (such as "freedom for private enterprise first"; or "collectivization of means of production first"), feeling that the world is too complex to permit such generalizations. Rather, the idea would be to try to arrive at a set of indicators whereby social accounting for the world (at the five levels mentioned in the preceding section) can take place so that we may better see how far, or short, we have come - *ou en sommes-nous!* This certainly does not exclude strategic analysis which we hope will become a major spin-off from the program, but we first want to liberate ourselves from the assumptions of any single ideology.

Having said this, the problem nevertheless remains: how do we select values from the four sources mentioned above? Somehow this has to be guided by a minimum of social theory, or at least social taxonomy - and that is developed elsewhere.¹¹ Suffice it here only to say that we have been drawing on the two perspectives reflected in the first and second levels in the preceding section, respectively: an *actor-oriented* view of a society as a set of actors (individuals, countries, organizations), and a *structure-oriented* view of society as a structure of actors, or

rather of the positions they fill in that structure. The first perspective is more developed in liberal analysis and leads to value-dimensions and indicators derived from classifications and distributions of these actors. The second perspective is more developed in marxist analysis and leads to value-dimensions and indicators derived from the structure in which these actors are embedded. What this leads to will be shown in the next section - let us only add that we are open to the accusation that we have misinterpreted both liberal and marxist thinking. This is probably true, but we have seen them as sources and perspectives rather than as anything to be reflected meticulously; moreover, there are so many varieties in either. The two perspectives just mentioned seem to be of greater consequence and it is actually on that basis the dimensions have been derived.

But then there is another and much more troublesome question: what makes us believe that we, social scientists, members of the social elite in rich countries, are entitled to sit in our offices, postulating values for the world? Answer: *nothing*, and there is no problem that worries us more in the whole program. Somehow these or other values should come from people themselves. Of course, we also belong to the people so we are also entitled to have our say and enter into dialogue with others. We may even initiate that dialogue, but the dialogue should not form a closed loop comprising national and transnational elites only. It should form a complex loop comprising as many as possible, and many more than what is considered "possible" (opportune?) today. Since this basic problem has many facets that appear in several sections below, we shall try to deal with it more extensively in the last section of this first part of the paper.

(4) *The program excludes indicators of theoretical variables.*

There are several reasons for this, and one of them is the simple need to limit this program to what is considered essential: the focus on basic value-dimensions. The term "indicator" is used in social analysis for anything observable ("manifest") that may be used to tell us something about a deeper ("latent") dimension,¹² and a considerable part of social science methodology is devoted to the relation between these two levels. Actually, in the present paper the second part is devoted to the latent level

(the *value*-dimensions), and the third part to the manifest level (the *indicators* of these value-dimensions), so there is no objection to this way of viewing an important aspect of social analysis. But the broad definition of "indicators" would make the program coextensive with the greater part of social analysis, which is not the purpose. The priority in this program is given not to what might seem to be theoretically basic (in the sense of being close to the top or the center of a hypothetical-deductive system), but to what is axiologically basic, in value terms. Another point, and a possible spin-off from this program, is that we would like to see social analysis framed and phrased much more in terms of dimensions that are at the same time value-dimensions - as argued extensively elsewhere.¹³

To this it may be objected that the argument is not in favor of *any* theoretical variable, but of variables that are crucial in *models* that would also include the value-dimensions. For instance, indicators of the history of the unit in question, trying to express its past situation, certainly neither reflects ends (it is too late to go maximize history) nor means (it is too late to manipulate it), but may nevertheless be very effective predictors of the present situation. To this the answer would be two-fold: the purpose is not to develop social theory; this is important, but although it will be made use of it is not central to *this* research program.¹⁴

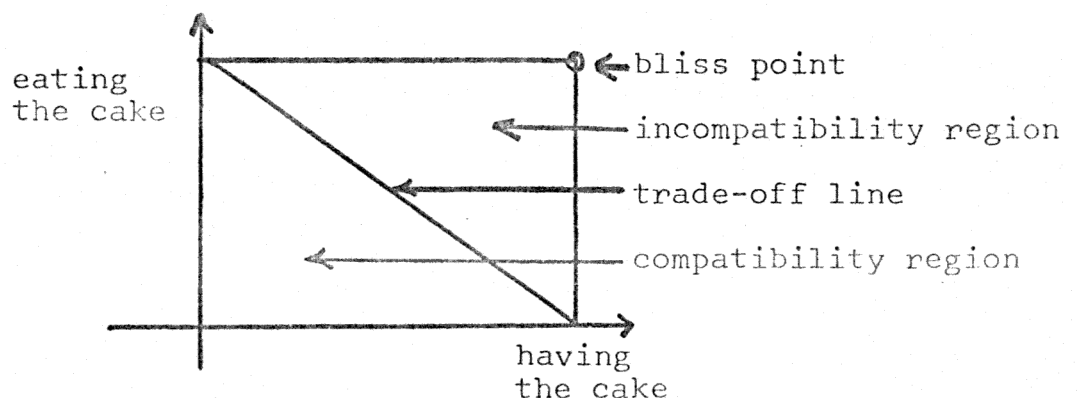
Second, and more importantly: *any model excludes something*, otherwise it would not be a model (but merely a list of dimensions and their product-space, not divided into zones that are - more or less - excluded or included in the model). We are afraid of any model that, like a social welfare function introduces ideas of optimal points and tells us that something is excluded, is not possible. It tends to paralyze the search for new efforts, for alternative strategies and tie us to a more narrow view. This may be the only realistic thing in a concrete situation, but we do not want this entire program to be wedded to any such model or theory. Rather, the task will be to build a platform of basic value dimensions from which, especially, new strategies may emerge - not start with models derived from very special contexts (e.g. from the situation in most Latin-American countries today) or the most studied country - because of the high number of social

scientists, not implying that it is studied well - the United States), and then generalized and reified into general social laws.

But what about models that *only* include value-dimensions, even the value-dimensions that we have singled out for attention? We are thinking about models about secondary (tertiary, etc.) consequences, i.e. models to the effect that "if you increase the value of dimension X, then sooner or later you will get a decrease in the value of dimension Y". Formulated very simply: the world has its limitations, its constraints; you can wish for anything, but you cannot have your cake and eat it too. Hence one has to stipulate priorities indicating which values are more important, even impose on them a partial or linear ordering so that we (a) know where to start, (b) have some guideline as to where to locate the trade-off points between two (or any set of) values in case of conflict.

In short, the world is seen in this perspective:

Figure 1. *The trade-off between values*



Ideal would be to have all and eat all, referred to as the point of "bliss" in Figure 1; the point is - alas - located in the incompatibility region so the best one can do is to agree on a trade-off along the line running from the two extremes of the eater (who eats all and ends up with nothing) and the saver (who eats nothing and keeps it all). So self-evident - except for two arguments: the arguments against the "principle of unripe time" and against the "principle of social invariance". Underlying them both is the idea that any postulate of incompatibility should be seen as an ideology, and like for any other ideology it is fruitful to ask: in whose interest! One should not stop

thinking and acting simply because a certificate of incompatibility has been issued by somebody.

First, the idea of an incompatibility may serve as a *political pretext* to postpone, indefinitely, the realization of the value given lowest priority, saying that "time is not yet ripe". The two examples in section (3) above of liberal and marxist thinking may serve as an illustration. We exclude the conservatives in either camp to whom equality or freedom may not even be a value at all; they are uninteresting in this situation because they have solved the problem by truncating the value-set. The liberal who converts freedom (for the entrepreneur and his class) into growth but never finds time ripe for the type of redistribution or restructuring that may lead to equality because "it will stifle freedom and growth", is more interesting; and so is the marxist who finds time unripe for freedom because "it will lead to the restoration of an entrepreneurial class and hence a regeneration of the old social order". Of course, it is painfully clear how these ideologies of incompatibility serve - intentionally or not - the interests of the old or new classes in systems built on such ideological bases. In so being, they stifle the search for general *liberation*, and serve as a pretext to sacrifice generation after generation.

Second, the idea of an incompatibility serves to freeze the image of society, unless it is formulated very modestly, as "*here and now these two values seem to be incompatible, at least partly*" (the last word referring to extent and shape of the incompatibility region in Fig. 1, or more technically to the "incompatibility function"¹⁵). It stifles the search for *transcendence* of the incompatibility. Suffice it only to mention the Chinese People's Communes as a social formation that seems to rank quite high both on equality, socio-economic growth and freedom (in that order), and with potentials for increases in all three. Probably this has something to do with their division of labor (being much more horizontal than in, say, the US or the Soviet Union, in Western or in Eastern Europe); through systematic changes on that dimension they seem to have been able to transcend the incompatibilities (in this case better referred to as contradictions) of the other two systems.¹⁶ (How lasting this is, and whether it applies to other sectors of Chinese society is another question.) Incidentally, should we then not include "division of

labor" as an indicator? In general analysis certainly, but not in this program. It might divert attention from the *general* problem of realizing many, all values and focus too much on what is definitely *one* way of doing it (although today that method rightly looms very high on the political horizon).

But what about the cake example, do we not have to admit that this is an immutable incompatibility? Not at all, there is no way of saying that this will forever remain a constant-sum game. Without implying that there may be ways of recovering the cake from human waste, history abounds with examples of how constant-sum games have been converted into increasing-sum ones - although admittedly by taking resources from the environment. Most important today is the game that has permitted capitalism to continue resolving some of the contradictions between capital and labor by having an ever-increasing cake, thus permitting both parties to increase - not their share, but their take - at the expense of making much of the rest of the world a source of raw materials, cheap producers and manipulable consumers.¹⁷ In this search for increasing-sum games there must be some loser somewhere, partly in Nature, partly in Man himself - and this will be explored in sections (6) and (7) below. In other words, we do recognize the principle of incompatibility *to some extent*, but we want to explore the perimeter and conditions of its applicability. Actually, it should also be added that there are decreasing-sum games - for instance when a third party is called in to solve the cake case on the condition of getting a fee, ultimately driving the system into the bottom left corner of Fig. 1 with neither eating, nor having.

Maybe we could summarize what we have just said in an article of faith: *we do not believe in incompatibilities or immutable social laws*; the world is not that rigid nor is man that poor in resources - if we were, we would still be "higher primates" only.

(5) *The program excludes indicators of means.* With all the emphasis above on *basic values* this may sound rather trite, merely a repetition, *if it had not been for the circumstance that most programs in this field are about means, not about ends.* Thus, look at this list:

	ENDS, NEEDS	MEANS, GOODS
Physiological balance	<i>food, water</i>	food production
Ecological balance	<i>clothes, shelter</i>	clothes production shelter production
Somatic, mental well-being	<i>health</i>	health institutions
Community	<i>education</i>	schooling
Creativity	<i>work</i>	jobs
Freedom	<i>mobility</i>	transportation, communication

Thus, we take it that there is a fundamental need for food, clothes, shelter, health and education; and then for work and mobility - but that is not the same as saying that the means/goods factually, concretely offered satisfy these needs. Nor is it so obvious that the ends/needs are correctly formulated either - for which reason we have presented a first column above trying to get at fundamentals. And we could also have presented a fourth column giving the *inputs* (capital, skilled and unskilled labor, raw materials, technology, research) presumably needed to produce the means that lead to the ends (the satisfaction of the needs) that relate to the first column. However, our goal is not input-output analysis (with input/output ratios and input/output elasticities) according to a model - we have argued against that in the preceding section. We want indicators of ends, *in casu* the extent to which fundamental needs are satisfied - but where on the continuum between the three columns above should we land to carry out that measuring operation?

Obviously not in the first column, for this is the level of very general and theoretical formulation; terms that deliberately are kept rich in connotations. But not in the third column either, and for two reasons: the means indicated may only be means within a certain range and after that they may show diminishing returns, even be counterproductive; and the means may be irrelevant, even counterproductive in any range of variation.

Thus, any dimension in this field of analysis should be used in an experiment, either in empirical reality or as a mental

heuristic: *imagine higher and higher values on the dimension, what happens then to need-satisfaction or to human well-being in general*, since that is what the first column is supposed to add up to? Are the needs increasingly satisfied with increase in the means (a monotone relation), or is there a plateau with no further returns, eventually even a negative return, a downward slope (a non-monotone relation)? Still worse, could it be that there is no upward slope at all, not to mention the worst possible case, that the slope is downward from the very beginning? If the answer is yes to any one of these questions, that does not mean that the dimension is uninteresting, only that it is not a value-dimension in our sense - and hence not something we are interested in developing indicators of (this statement will be subject to an important modification below, however). Let us look at two examples, the case of transportation/communication and the case of jobs, or schooling.

Up to a certain point there is no doubt that increased transportation/communication *permits* the free flow of persons and ideas; one *may* express and be impressed. Consequently it might be tempting to use the amount of transportation and communication that goes on in society as an indicator, and we may have to do with that, if this is the best we have and we use it with care. But the question remains: even *with* free flow, is anything in fact expressed or impressed? And with *very much* free flow, with everybody running around and communicating all the time, is there any capacity left for anything to be expressed or impressed by and upon minds fatigued, even rendered apathetic, distorted, fragmented by too much transportation/communication? To this it may be objected that free flow is more of a *bene per se*, with which we might agree, but in that case the indicator would be that it is permitted to "flow", to move, to send and receive messages of all kinds; not the extent to which this permission is made use of. In other words, it is the extent to which this human right is granted, not the extent to which it is made use of; the good is the freedom to move, not a high volume of mobility. On the other hand again, if that freedom is never made use of - where are we then? We offer this in an effort to formulate the problem, that of making a distinction between means and ends in order to zoom in on the end - so as not to fall into the trap of ready-made answers, basing indicators on dubious means.

The second case has to do with jobs, or with schooling. In either case it may be argued, *under certain conditions*, that the more jobs you have, or the more schooling, the less work and education. Why? Imagine the jobs are all totally routinized, completely deprived of any possibility of self-expression, of creativity - implementing crude taylorism, e.g. in the assembly-line form (now being disavowed increasingly). In that case they may be a means to get an income which may be converted into food, clothes, shelter and health (and would appear as measures of the extent to which these needs are satisfied), but the extent to which everybody has a *job* is not a measure of the extent to which they have *work*. It may be even counterindicative: the more jobs they have, the less free time in which they *might* engage in some kind of creative work. And the same with schooling: imagine a society where the only purpose of going to school is to get a diploma which gives a status that entitles one to compete for, for instance, jobs. It is certainly not obvious that much education goes on in such schools, particularly if education is to include an emphasis on developing capacity to associate with others, to learn for personal growth and social participation.¹⁸ Of course, this is very much a question of how we choose to define education, but the problem still remains, and most indicators of education used in the world today are, in fact, indicators of schooling.

It is not difficult to understand the mechanism underlying this. To develop the means for any end *some* type of production (in a broad sense) is needed; the production demands some steering, this develops into some type of bureaucracy; the bureaucracy becomes self-perpetuating and tends to evaluate itself in terms of its own output, becoming means-rather than ends-oriented. Serious reference to the ends will be met with uneasiness and jokes, partly because of the vested interest in own institutional growth. Actually, this is our major reason for the insistence on ends: only through this emphasis is it possible to obtain two crucial points, a critical examination of whether all these institutions really deliver the goods, and (hopefully) a fresh, critical approach to what the ends actually are. Of course, all this can be done and is indeed being done through critical social analysis in general; the added benefit from indicator analysis is the precision it forces us into - a precision which may, admittedly, also be counterproductive.

As a test of this heuristic let us ask a question: what is the end to which political institutions (as known in presidential and parliamentary democracies) presumably are the means? The question is important, for many efforts to solve the problem of "political indicators" are in reality measures of the institutionalization of certain aspects of these special socio-political formations - the presence of a party system, regular and free elections, extensive electorates and eligibility, majority rule combined with minority rights, the possibility of recall and referendum, etc.²⁰ Evidently these are means intended to make it possible to do politics, *but what is politics?* Is it a series of referenda, possibly even carried out as computerized polls at regular intervals, with the citizens themselves deciding the questions? We would rather think not, and prefer to conceive of politics as some kind of social dialectic with such elements as *consciousness-formation* (often of a completely unexpected kind), *political mobilization* (often along completely unexpected dividing lines), *confrontation* (often concerning an issue that was not on the old, institutionalized political agenda), a *struggle* (which may be slow or quick, actor-oriented or structure-oriented), and some type of *transcendence* whereby a new self-reliant social formation emerges.²¹ The institutions of presidential/parliamentary democracy *may* permit this. But they may also institutionalize ideas, organizations, issues and polarities long since left behind by the social dialectic - as it unfolds itself (and we do not think that anyone knows how it unfolds itself, certainly not only along the slave-feudal-capitalist-socialist-communist societies chain), and in doing so they *may* impede rather than facilitate the political process. The higher the society ranks on the presence of these means, the less real politics will take place. Again, we are not sure what the alternative answer is, but we have at least found a way of phrasing the problem.

In general: many indicators are, in fact, indicators of means and are at most useful within limited ranges (e.g. volume of transportation/communication). But would this not apply to almost all dimensions; would one not have a *quantum satis* or *in media res* principle for all of them? This is where the modification alluded to above enters. All we have said so far is an argument against the idea of means as *sufficient*, in any range of variation, to ensure the end - and the basic end, we assume,

has something to do with personal well-being, self-actuation, growth. But there may be values that are *necessary*, at least within a certain range, for any talk about this supreme end to be meaningful at all; the optimal range of these variables will be defined by that effect. Take diversity or participation as examples: no doubt there may be so much diversity and participation that the individual breaks down because of over-exposure. But if there is none of it we would claim that personal growth cannot, will not take place. A person may do without schooling, but not without education; without jobs, but not without work - that is the crux of the matter.

(6) *The principle of sufficiency, undersufficiency and oversufficiency.* In the theory of development we can probably distinguish between three phases. *In the past* one seemed to conceive of development very much in terms of what the elite had at its disposal: an economy capable of heavy production, political power, a strong army, a rich culture, the capacity to make oneself felt at distant corners of the world - in short, strong institutions in the economic, political, military, cultural and transportation/communication fields. Of course, this was not referred to as being at the disposal mainly of the elite, it was all seen as belonging to the country as a whole. As a concession to democracy the idea that everybody should count equally, the strange habit of dividing all such measures by the number of inhabitants developed - we got GNP per capita, electoral participation, the whole population as a component of military power (with the concomitant ideas of general conscription and total war), school enrollment and number of books per capita, kilometers travelled and letters mailed per capita. Most of these measures are still with us and may still be useful as a measure of the capacity of the society as a whole.

Today, however, we are already in a second phase due to the dissatisfaction with these aggregate measures. It has been pointed out that they tell us nothing about distribution, about internal dispersion, which is entirely true. More particularly, and more important than the focus on dispersion, however, is the idea of a *floor*, a bottom level when it comes to need-satisfaction below which no individual should be located. For the fundamental

needs the idea is completely clear, for the almost fundamental need is a little less so, but that should not worry us here. The important point is the new approach to development, that development is no longer measured in terms of what society produces, in absolute or per capita terms, *but in terms of how many are above the floor in terms of need-satisfaction*. That this floor or minimum may vary with age, sex and place is obvious; the idea remains that *development should be measured in terms of what happens at the bottom of society, not in global or average terms*. The average may show an impressive growth; if 20, 25, 33, 50 per cent remain below the floor, then there is no development at all according to this perspective (and from the point of view of equality even a negative development).

Tomorrow, and tomorrow is to some extent already here, there will be a third phase with a corresponding emphasis on the idea of a *ceiling*, a top level when it comes to need-satisfaction above which no individual should be located. The question is how one would argue in favor of such a ceiling, and there seem to be two different lines of thinking that may or may not lead to the same or similar answers. First, there is the idea of the *finite world*, of scarce resources, of the limited carrying capacity of the biosphere that would put an upper limit on consumption of, for instance, food. Second, there is the idea of *equality as a goal*, perhaps not so much as a *bene per se* as a necessary condition for the personal growth of all: inequality means the unequal distribution of resources, this means differential access to resource power, and with that comes the (potential) power over other persons, leaving them less free than they could otherwise have been. The argument does not necessarily take the form of a ceiling identical with the floor, but of a ceiling not too much removed from the floor so that those on the top do not have too much of a privilege relative to the rest. Applied to income, for instance, the argument might not be equal income but, say, a ceiling not more than twice above the floor. At this level there is also differential resource power, but less so than when the ceiling is ten, hundred, thousand times above a floor so full of holes that a sizeable minority, even the majority fall through it. On the other hand, if all are located above the ceiling, this argument might become void - it has to be supplemented with information about the factual disparity.

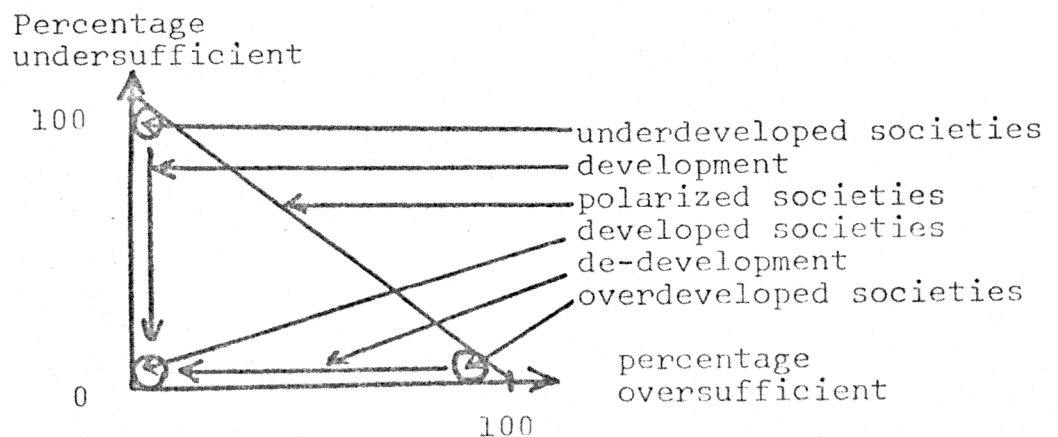
We now assume that we live in a world, and in a country, where the ceiling is located above the floor: there is a positive window. (This is not obvious: the first ceiling argument might well lead to a negative window if the population explosion continues unabated.) This would divide the population into three groups:²²

- below the floor: the *undersufficiency* group, U ("masses");
- between floor and ceiling: the *sufficiency* group, S;
- above the floor: the *oversufficiency* group, C ("elites").

It would simplify greatly if we could use the same floor and ceiling cutting points around the world, but we realize that to be unrealistic (in the future, when the world community becomes more of a society, more universal standards might emerge, though - for instance as to the minimum and maximum number of children considered desirable - possibly one and two, respectively). So far we have defined development as *the percentage non-U*, using the floor-perspective; using the ceiling-perspective we would add to that *the percentage non-C*. This might be combined in *the percentage S*, but one would then lose important information about under- and over-sufficiency, about who get too little and who too much of the world resources.

The diagram below gives some indications:

Figure 2. *Sufficiency, undersufficiency and oversufficiency*



This approach seems to us to be promising and in line with current thinking. Ideally it would show for each society how its population distributes on the three groups. There are two clear difficulties, however: exactly what we mean by "underdevelopment"

and "overdeveloped" societies, and how do we establish the cutting point between the floors and the ceilings? This will be the subject of the next sections and the final section, respectively.

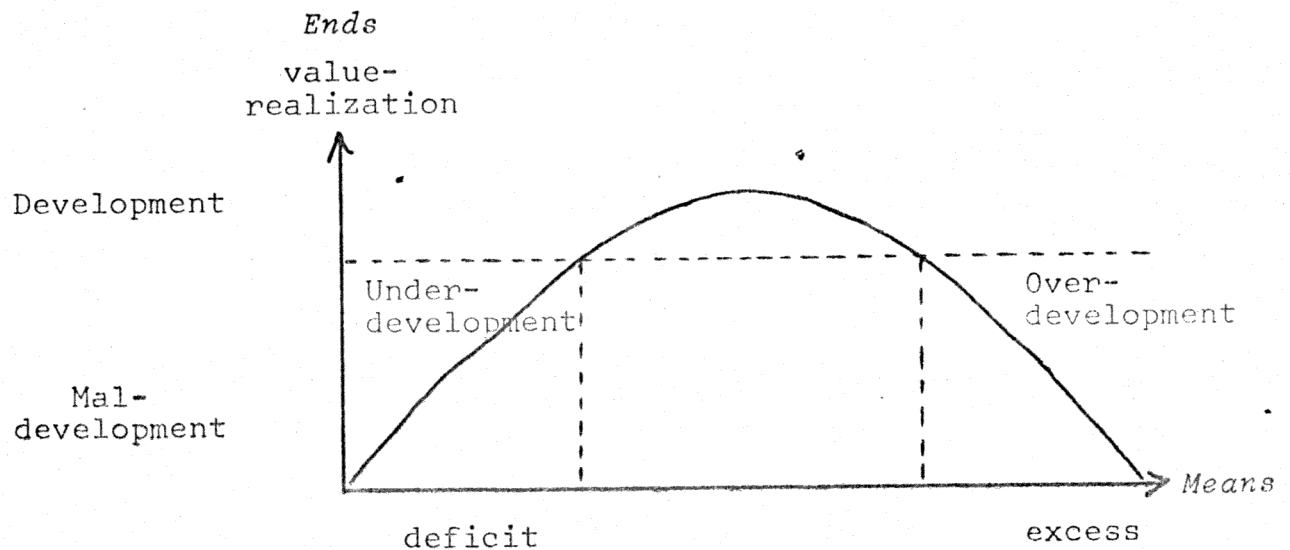
(7) *The principle of development, underdevelopment and overdevelopment.* We can now combine what has been developed in the two preceding sections into the beginning of a theory about development and maldevelopment,²³ dividing the latter into underdevelopment and overdevelopment. Development is defined as the *degree of value-realization*, values being divided into needs and goals, needs being divided into fundamental and almost fundamental. It may be disputed whether development is a process rather than a state of affairs, becoming rather than being, a movement along the dimensions rather than a location in the upper region. However this is, maldevelopment is its negation and the problem is how to conceive of its *two* forms: underdevelopment and overdevelopment. This is not the same as undersufficiency and oversufficiency when it comes to need-satisfaction, for these terms refer to the individual level; underdevelopment and overdevelopment refer to the country level (or to some other collective level). The concepts are empirically related, but logically they belong to different levels of social organization (actually to the first and second level in (1) above), and to the domestic and global levels of (2) above.

We want a simple way of conceiving of these ideas, and one suggestion is as follows. As the terms themselves indicate: under the condition of underdevelopment there is too little of something, where there is overdevelopment there is too much of something. What is this something? It cannot be the ends, the value-realization, for we have assumed this to be defined in such a way that there can be enough, but never be too much. So let us assume that there is too little or too much of the means of value-realization; that under the conditions of underdevelopment there is a deficit of means, whereas under the conditions of overdevelopment there is an excess. There is so much means available that they stand in the way of value-realization in general and need-satisfaction in particular; for people in one's own country, not to mention for people elsewhere. The man-made environment contains too much rather than too little; it has

become too much rather than too little elaborated. Actually, the two conditions may very well obtain side by side in the same country, the same city, the same village, in the same person.

The idea is illustrated in Figure 3.

Figure 3. *Development, underdevelopment and overdevelopment*



It should immediately be stressed that whereas it may not be too difficult to decide whether a society is developed or maldeveloped, by means of some cutting point along that axis, it may not be so easy to decide whether the maldevelopment is a case of underdevelopment or overdevelopment. In some cases it is easy, particularly with regard to fundamental needs:

- *food*: the concept of two types of mal-nutrition, under-nutrition and over-nutrition are well established.
- *clothing*: to the extent that clothes constitute a shelter against the natural environment, e.g. low temperature, it is very clear what too little and too much clothing would mean.
- *housing*: again the deficit side is clear, but what should be meant by excessive housing?
- *health*: in this sector it does not look as if "over-healthy" is a concept that has reached the level of becoming a public issue; but it is well known that increased life-expectancy may in fact only mean an increase in the period of senility and hence, possibly, a decrease in health.
- *education*: it already makes good sense not only to talk about too little schooling, but also about too much schooling, about over-educated people.

In some of the cases above, overdevelopment could not be defined *directly*, in terms of diminishing returns with increasing availability of means - as for the case of food intake, excessive clothing, excessive schooling leading to a quantity of life rather than quality of life. In such cases, however, there is another indirect approach to overdevelopment: what it means in terms of *depletion of world resources*. Too big houses to everybody would not hit back on the individual consumers of those houses directly (unless one assumes that too big dwelling areas impede rather than facilitate real community among family members), but would consume space and building materials to an extent that would come in the way of need satisfaction, along the housing dimension, and/or other dimensions for other people.

Thus, there are so far two criteria available for a diagnosis in terms of overdevelopment: *diminishing, even negative returns* (marginal utilities) and *scarcity of resources*; the former direct, the latter indirect. The latter has to do with the *limitations of nature*, the former with the *limitations of man*: there is a limit to how much our *soma* and *psyche* can absorb.

It should be emphasized that in the Figure the means are often ends: the realization of one value may stand in the way of realizing another. This is rather obvious where it is a question of scarce resources, e.g. a problem of whether higher priority should be given to food, clothes, housing, health or education when it comes to allocation of capital and manpower. But there is also a more direct relation: too much production may, through pollution and depletion, be dangerous to health or to any need-satisfaction for that matter. And just as there is a limit to how much the human body can consume of nutrition before it becomes overfed, there is a limit to how much input the human mind can take before it starts suffering from such phenomena as information overload, excessive ambiguity, too high complexity in the environment and reacts with stereotypes or withdraws, even into apathy.²⁴ All the structural value dimensions to be developed point in this direction: toward more complex societies where individuals are no longer hanging on the tail end of hierarchies with narrow or clogged communication channels, but participate relatively equally in complex, symmetric social networks. Again we would argue against believing that there are contradictions here that cannot

be overcome, for instance by living in a more decentralized society where complexity is compensated for by means of smallness. Nor does it mean that these structural dimensions are not terribly important values, only that they must be seen as necessary rather than sufficient (in an unlimited way) conditions for human self-realization.

In addition to the *limitations of nature* and the *limitations of man*, responsible for the principles of diminishing returns there is, then, the third idea developed in the preceding section: the *principle of equality*, the idea of overdevelopment in the sense of the country having too much of an edge in resource power over other countries. It is in no need of elaboration, suffice it only to say that these three ideas may or may not lead to the same diagnosis in terms of under/overdevelopment. What is certain, however, is that this may serve as one more warning against basing indicators on means: there would be no way of knowing whether one is not past the area of development, and well into the zone of overdevelopment.

So far we have tried to define under/overdevelopment but have not looked into its causes. Some of the causes are internal to the country in question, some of them are external, seen in the world structure, and a very fruitful perspective here is dialectical: *just as A may underdevelop B through mechanisms of, say, capitalist imperialism, B is in the process overdeveloping A.* Under- and overdevelopment may be seen as two sides of the same coin, and indicators should be designed so as to make it possible to grasp this phenomenon numerically. Actually, this is one more reason why it is so important to see the world as a structure, and not only as a list of countries; otherwise one cannot see how the overdevelopment of one is the cause of the underdevelopment of the other - and vice versa. Just as the industrialized West underdeveloped the oil-rich countries for generations, these countries also contributed to the overdevelopment of the industrialized West - a phenomenon which became very clear the moment they stopped participating through the oil embargo fall 1973.²⁵ Hence there are at least three good reasons for rejecting the idea of developing indicators for "developing countries" only: it marginalizes these countries as a world pariah caste; it sees them as the only source of their own problem, and it leaves

out this perspective on maldevelopment that also serves to make all countries more equal - we are only maldeveloped in different ways.

The principle of under/overdevelopment, and the underlying ideas of limitations of nature, limitations of man, and the principle of equality are not merely parts of an academic exercise. There is a basic point: development is seen as an intermediate zone, not as the upper part of a continuum. The curve in Fig. 3 expresses a basic principle. It was always like that, only that recently the idea of limitations of *nature* have also come into play. There has for a long time been oversufficiency for a part of the population and international inequality, but not overdevelopment for the whole country in the sense that it overtaxes natural resources as a whole, puts a sizeable portion of the population in the zone of oversatisfaction of needs and creates substantial inequalities relative to other countries through various types of structural mechanisms. Where the cut-off points are located is problematic, but the basic point is the category of overdevelopment and the need to reflect this in the indicators. The negation of development is now in two directions, and it is analytically and politically important to know in which direction a given country is maldeveloped.

(8) *The problem of development as a process.* We indicated above that development might be seen, perhaps in some cultures more than others, as becoming rather than being, as the move along the value-dimensions rather than the position on it. This is only one way of approaching the general idea of dynamic indicators, however. There seem to be two methods here and both should be used in the world indicators program although the practical problems to be overcome are tremendous.

First, there is the idea of adding *rates of change* to the repertory of indicators, already a part of common culture for the case of economic growth, and referred to as rate of growth. One important aspect of rates is that they may be high even when (or particularly when) the absolute level is low, thus reversing somewhat the usual rank ordering of countries. A country may be poor but dynamic, it may be rich but static - what is better depends

on whether the culture is becoming or being oriented (provided fundamental needs are satisfied - if they are not, that criterion should have priority). What might be new would be the idea of introducing rates for all indicators, based on annual data and annual increments or decrements. It should be possible to say not only what percentage is above the floor, but what is the rate of change, and count as a negative rate whenever there is an increase in the proportion above the ceiling - since that would be maldevelopment in the sense of overdevelopment.

Second, there is the idea of using *time series* not only on one dimension, but on two, several dimensions at the time (for the same or several countries) so as to be able to engage in bivariate and multivariate diachronic analysis.²⁵ This is a relatively powerful technique that enables us to identify some of the parameters of the process of development,²⁶ and although it does not yield indicators as such, this type of analysis will be an important spin-off from the program after some time.²⁷

(9) *The problem of data-collection.* It is standard methodology to inquire about the validity and reliability of data and we see no reason to depart from that practice. Actually, what we have discussed in the three preceding sections are variations around one common theme: that the only *valid* data are data that really reflect the level of value-realization, values meaning *ends*, ends meaning either personal growth or necessary conditions for personal growth - roughly speaking. But what about *reliability*?

There are many ways of defining this concept. Some of them are unacceptable, e.g. the idea that reliability should have anything to do with constancy over time - in that case only invariant units could ever be reliably measured.²⁸ Nor are we interested in reliability in the sense of high correlation between data obtained through different methods of data-collection; that should rather be referred to as inter-method replicability.²⁹ We conceive of reliability as *intersubjective reliability*, as the extent to which another investigator using the same methods would come to the same result (the same "readings", the same data), and refer to reliable data as "hard", to unreliable data as "soft", avoiding the overloaded terms "objective" and "subjective".

The trouble is, of course, that reliable data tend not to be valid, and vice versa. Even if *statistical data collected by non-governmental, governmental and intergovernmental agencies* and published by them (except for some deliberate lies for political purposes) were valid (and they are not, because of the tremendous difficulties involved, it generally being assumed that underdeveloped countries have underdeveloped statistics) it might not help us much since they tend to measure means, such as schooling enrollment, job employment; not what is here considered to be the ends, true education, work with some elements of creativity.

This being the case, one would often have to turn to other types of data that would be more valid, even at the risk of decreased reliability, or to data that involve only very crude measurement, perhaps even of the (0,1) type (something *is* vs. something *is not* the case, leaving completely out the question of degree).

There are two other types of data collection that might be of special interest in this connection: *evaluation by expert panels*, and *public opinion surveys*. Take, for instance, the human rights situation in a country: who would be better at evaluating this than a panel of human rights experts, some from the country, some from outside, some victims, some not, who are asked questions individually and then given a chance to compare answers to see whether they could arrive at a consensus? If only at the level of (0,1) measurement? To test the reliability one might even work with two separate panels to see to what extent they came up with the same profile. Or, take such a basic thing as work satisfaction: who would be better judges in this than the workers themselves? In that case they could be asked questions of evaluation; if the task were to find out something about the level of education, people might also be asked cognitive questions - simply using the poll as an examination *en miniature*. Actually, this is the place where the term "subjective" might be used, for the subjects are pronouncing themselves on their own situation; but the procedure might still be very reliable (giving the same results if replaced by other pollsters). "Objective", then, would be the term used for data that do not refer to attitudes but for instance to behavioral patterns, to institutional arrangements and structures (surveys are not so good for that, they

tend to individualize the view of society, to be excessively actor-oriented.

What is wanted is obviously data that are validated, reliable (hard); subjective or objective does not matter. ~~In short, one~~ needs methodological pluralism, relying both on traditional statistics (already published or new ones that bureaucracies might be persuaded into collecting and/or publishing), evaluation by expert panels, and public opinion surveys.

(10) *The problem of popular participation.* Finally, we turn to what was mentioned at the end of section (3) as the most traumatic problem of them all: popular participation in this entire process. It should then be pointed out that this is not a question of social scientists abdicating: we have a craft, like a carpenter has and like him we can do it more or less well. But unlike the carpenter our work may structure the future of human society. Hence, our concern should not be how to make an impact on politicians. We should be afraid of having too much, not of having too little power. Our concern should be to relate meaningfully to people in general, and here are some points in that connection.

First, there should be a process whereby people all over the world could articulate their ideas

- as to which are the basic values, needs and goals
- what would be their priorities
- where are the cutting points, particularly on the need dimensions - what is considered the floor, what is considered the ceiling.

Second, when it comes to how to generate this process it should be noted that public opinion surveys have a role to play, but a limited one. It can be used to get *some* ideas about the three questions above. In that case the interview/questionnaire should be relatively open-ended when it comes to locating basic values, and interviews would probably have to be used to permit sufficient non-directive probing. When it comes to priorities it could partly be related to the respondents' own list of values, partly to a given list of values (the present one or some other list). The method of paired comparison could be used ("what

would you rather be, poor and educated or rich and uneducated"; or "where would you rather live, in a poor country that exploits noone, or in a rich country that exploits others and nature"). For attitudes to cutting points some graphic means could be used, relating it very much to the respondents' own situation ("with how little could you do", "what is the maximum you think you might like to have/could make use of/anybody might have"). However, surveys should not be confused with dialogue, they may be more or less adequate when it comes to assessing attitudes, but they do not form part of a social dialectic. For that to happen some setting for real dialogue with popular participation and with or without social scientists and politicians participating, should be found.

Third, such dialogue settings could be ad hoc, organized by people working on social indicators as a way of making themselves accountable to people at large. But they could also make use of any country's organization system, particularly those organizations that are chapters of international organizations so that some international coordination could be possible. Particularly important here would be trade unions and professional organizations - not so important would be political parties since their answers are relatively predictable. This dialogue, then, should have impact on the formulation of value-dimensions and indicators. Since this debate has not even started, it will take time before it reaches a level of depth that can make it a source of social development. Needless to say, future studies groups should be interested in fermenting this type of debate since it is so central to the problem of raising consciousness about the future.

Fourth, the output from social indicators programs, the data, their presentation and synthesis should be made in such a way that it is accessible to anyone with primary education who wants to know. For this to happen indicators should be *simple*, it should be possible to explain how they are made in a couple of minutes to somebody who knows how to add, subtract, multiply and divide (thus ruling out all more complex forms of mathematics). If this is not possible, indicators will merely become one more protective wall, protecting elites against the inquisitive, critical eyes of people, and serve the opposite values of what so many indicator systems purport to reflect. This does not mean that the social scientist also should be able to arrive at any

idea about how to make an indicator in a couple of minutes. Again the carpenter: it takes him only some minutes to explain the table; it takes considerably more time to arrive at it.

Fifth: there should be nothing final ~~about any indicator~~ program, it should always be open-ended, sensitive to criticism, willing to expand and contract as it is confronted with reality. And the most important part of reality is the human condition it is supposed to reflect, the reaction from *people*.

2. *The value dimensions: needs and goals*

There are ten value dimensions that have been chosen as basic concerns for this program. So far they seem to, in their totality, meet with the requirements postulated in the preceding section, and also to prove themselves helpful in locating and defining new research problems. However, in a program of this kind it is indeed mandatory that the list of value dimensions is open, that one is willing to add or subtract when it leads to absurdities upon confrontation with empirical reality and research practice. In short, the list of ten value dimensions to be presented here should not be conceived of as in any sense final; it is a proposal.

The ten value dimensions, with their antonyms in parentheses, are:

Table 2. *Ten value-dimensions with antonyms*

- (1) personal growth (alienation)
- (2) diversity (uniformity)
- (3) socio-economic growth (poverty)
- (4) equality (inequality)
- (5) social justice (social injustice)
- (6) equity (exploitation)
- (7) autonomy (penetration)
- (8) solidarity (fragmentation)
- (9) participation (marginalization)
- (10) ecological balance (ecological imbalance)

These ten are the outcomes of Galtung's work within the World Order Models Project, and a more detailed analysis is presented in *The True Worlds: A Transnational Perspective*.³¹ This is not the place to go into any detail, but some comments are needed to make the list more meaningful.

At the top of the list is the most basic value, expressed in terms of personal growth. This is the fundamental value in the sense that all the others are subordinate and seen as necessary conditions for its realization. It is autotelic; the others are heterotelic. None of the others is seen as a *bene per se*. Thus, equality is not seen as a value in its own right but as a necessary condition for the personal growth of all, and the same as to equity.³²

A person is body and soul, *soma* and *psyche*. A person has needs, some of them are fundamental, some of them are almost fundamental. We take the fundamental needs to be the following:

Table 3a. *Fundamental needs*

	<i>Needs</i>	<i>Goods</i>
Physiological	<i>Input</i> : nutrition, air, water, sleep <i>Output</i> : movement, excretion	
Ecological	<i>Climatic</i> : temperature, weather	CLOTHES, SHELTER HEALTH
	<i>Somatic</i> : contagious, non-contagious	
	<i>Community</i> : togetherness, love, sex <i>Culture</i> : language, communication	EDUCATION

The needs are in the center of this list. What is to the right are the *goods* that have to be produced by society in order to satisfy these needs. It should be pointed out that these two lists are not identical. Thus, togetherness, love and sex are seen as fundamental needs but there are no goods that have to be produced for their satisfaction. On the contrary, one of the strong arguments against current forms of production is that they lead to their dissatisfaction, by fragmenting people, making them self-oriented, incapable of deeper love, in some cases also

Then, there are the almost fundamental needs, which we take to be two:³³

Table 3b. *Almost fundamental needs*

Creativity	<i>Work</i> : as a possibility of self-expression	TRANSPORTATION
Freedom	<i>Mobility of persons</i> ; as senders, receivers	JOB
	<i>Mobility of ideas</i> ; as senders, receivers	COMMUNICATION

Again a distinction is made between the needs, and the goods delivered by society to, presumably, satisfy these needs.

The rationale behind these two lists is very simple.

First, it should be mentioned that underlying them all is the most fundamental condition possible: *human life*. The right to live is the most fundamental human right; simply the right not to be deprived of one's life.

Second, there are the fundamental needs. If the physiological and ecological needs are satisfied, then the human body is protected, the person survives as a biological *being*. But the person only becomes a *human* being when the social needs for community and participation and culture are satisfied.

Third, in order for a person to grow beyond that it is assumed that certain near fundamental needs of creativity and freedom have to be satisfied. The person survives without their satisfaction, for which reason they are "almost" fundamental, but in any theory of personal growth they must occupy a prominent position. It may be that politics also belongs here.

Beyond that we have not tried to proceed in this program, so far.³⁴ One gets into intangibles, and the approach should perhaps rather be negative: whatever is meant by personal growth beyond this it is usually clear that it is incompatible with the non-realization of fundamental needs, almost fundamental needs and the other nine value dimensions - now to be elaborated.

The first of them is *diversity*, or *pluralism* which it is also often called. It splits into two: the form that is best known in Western, liberal theory viz. *cultural* pluralism - the variety of ideologies, arts, etc. - and *structural* pluralism, which is a problem of diversity in social structure. They are both compatible with the idea of "let one hundred flowers bloom" - cultural flowers (including different nationalities within one country) and structural flowers (such as different ways of organizing schools, factories, etc.).³⁵ Needless to say, this diversity or pluralism is of no value at all unless there is freedom in the society, a flow of persons and ideas so that people can contribute to and benefit from either kind of diversity. The extent to which these freedoms are satisfied, thus, becomes crucial in this connection.

When it comes to *socio-economic growth* the approach taken in this program is definitely not to put the emphasis on what should rather be called "Western growth", which in addition to its culture-bound character also has proved itself to be much too compatible with Western interests in general and the structure of capitalist imperialism in particular. We are thinking of such dimensions as "economic growth", measured by Gross National Product, Gross Domestic Product or National Income, absolute or per capita; "industrialization" as measured by the percentage of the economy working in or derived from secondary sector activities; "tertiarization" which would be the same for the tertiary sector of the economic activity, or "urbanization", the percentage of the population living in urbanized units. At the best these are *means*.

Rather, by socio-economic growth, or rather socio-economic production since it does not really have to grow,³⁶ we are thinking of the extent to which the production system provides the goods needed for the satisfaction of fundamental needs and for the satisfaction of almost fundamental needs: food and water; clothes, shelter health and education; transportation and communication; and jobs. It should be emphasized that we are then a step removed from the point of departure for all our considerations: human beings. Thus, to what extent the food available really satisfies physiological needs, to what extent the education really serves to provide participation in culture, to what extent jobs really give a possibility for creative expression - these are rather important problems and not to be dealt with glibly, as already indicated in the preceding section.

Equality as a value dimension raises the issue of dispersion or disparity. But dispersion or disparity of what? In the first run of satisfaction of fundamental needs. Under the heading of "personal growth" the issue is to establish a *floor* under which is poverty, misery - a minimum for needs to be satisfied. Under the heading of "equality" the issue may be one of establishing a *ceiling*, a maximum when it comes to consumption beyond which one must not go. Why? As mentioned in the preceding section: because it would lead to overdevelopment, because of the limitations of our natural environment and/or because of the limitations of human beings. And in addition to this there is the other argument: inequality in the distribution of almost anything is inequality

in the distribution of some resource, and resources can usually be converted into power. Inequality, hence, means differential power, a potential whereby some may have power over others and thus delimit their possibilities of autonomous personal growth.

Again, as mentioned in the preceding section, in some cases the problem will be limitations of nature (scarcity of resources), in other cases the limitations of human beings (limited absorption capacity, decreasing quality). In all cases, however, the assumption is that an upper limit may be argued; the question is how to establish that upper limit, an issue we shall return to.

Social justice is also a question of distribution. Here, however, the issue is neither in terms of floor nor ceiling, but whether the consumption of goods correlates with such important social background variables as age, sex, class, race, ethnic belongingness, and so on. Social justice is the condition under which there is no such correlation; what one has does not depend on who one is - education does not depend on sex, health does not depend on class, and so on.

A special but very important case of social justice is equality of opportunity. Here the issue is one of access: the access to the institutions of health care, of education (schools), and so on. The distribution later on may show some correlation, but as a minimum there should be equality of opportunity. Thus, equality of opportunity does not necessarily lead to total social justice, nor does social justice imply equality: when there are as many women as men who have Ph.D.s there will still be considerable schooling distance between the Ph.D. and the elementary school graduate. And girls and boys should have the same access to schools.³⁷

That concludes the review of the more classical, distribution-oriented value dimensions, and we then turn to the next four, the structure-oriented value dimensions.

The first of them is *equity*, the antonym of which is exploitation: analytically perhaps the most fundamental of them all. But it is also the most problematic when it comes to operationalization.³⁸ We cannot develop an entire theory of exploitation here, suffice it only to say the following. Exploitation is inextricably tied to interaction, between persons or

between countries (or other actors). It is what takes place when the result of that interaction is a highly asymmetric accumulation of value. This asymmetry in accumulation can be traced back to what takes place between the actors, to their terms of exchange, and to what takes place inside the actors as a consequence of the interaction, the intra-actor spin-off effects. These two may go in opposite directions, however: a country may accept deteriorating terms of exchange provided she preserves the spin-off effects, for instance - she may pay higher prices for raw materials provided she still maintains a monopoly on the research and development of processed goods, to put it concretely. Formulated this way it is clear that the crucial factor underlying exploitation is division of labor, and exploitation can be identified with the expression "vertical division of labor".

Formulated this way it is clear that equity as the negation of exploitation may take several forms. The most radical form would be no interaction at all, self-sufficiency (as one important aspect of autonomy), if necessary brought about by decoupling.³⁸ Next in line would be the possibility of horizontal division of labor, whereby the accumulated net benefits are more equal. And then comes the last possibility: no division of labor at all, but in that case there will probably not be so much interaction in the sense of exchange either. *Independence* (no interaction) and *interdependence* (horizontal division of labor) thus stand out as the two alternatives to *dependence* (vertical division of labor).

Autonomy has already been mentioned, but it is conceived of here as a broader concept. Essentially it is the capacity of the actor not to depend on others in any respect, which is more than not to be exploited. It presupposes self-sufficiency, or rather a capacity for self-sufficiency, so that one cannot be manipulated by promises of remunerative power; fearlessness to make one less vulnerable to coercive power and self-respect so that one is the source of one's own self-understanding, ideology, culture.³⁹ The first of these, the extent to which one is dependent on exchange of commodities is relatively easy to conceive of, and at this point dependency obviously splits into two: negative dependence because of insufficient production so that the deficit has to be compensated for by imports, and positive

dependence because of over-sufficient production, so that the excess has to be compensated by means of exports.⁴⁰ Both of them are incompatible with true autonomy, for in neither case is it possible to build a wall around a country without severe disturbances as a consequence. The negatively and positively dependent obviously complement each other, and may stand in a relation of interdependence if there is no exploitation going on. For this reason we have emphasized the potential for self-sufficiency as a goal; to realize this potential at all times is not a goal for it would lead to a world split in a number of self-sufficient units, not woven together in equitable ties of interdependence.⁴¹

Fearlessness and self-respect are more difficult to conceive of, but not impossible - we shall return to them. The same applies to the important concept of self-reliance, which may be seen as the totality of the three aspects of autonomy discussed here.

Solidarity and *participation* have to do with the total interaction network, inside countries or in the world system. The opposite of solidarity is fragmentation, the opposite of participation is marginalization. Marginalization is what we have when a group of people, or a group of countries, is kept outside the general life of society against its will. It does not have to be a minority, in fact, many "minorities" are really majorities (such as the Africans in what the whites call Rhodesia). Nor is it necessarily those at the bottom that are marginalized, it may also be the top (like French and Russian aristocracies after the revolution). And the same applies to fragmentation: people or countries that are kept apart by the structure of interaction are usually at the bottom, but they may also be at the top.

Structurally speaking we shall identify solidarity with the possibility of establishing bilateral interaction links in all directions, and participation with the possibility of establishing multilateral interaction links (organizations), excluding nobody. This is in general, in practice the focus will mainly be on the extent to which those at the bottom are given the possibility of direct interaction (solidarity), and on whether those on the top show a tendency to marginalize others rather than bringing them into society-wide or world-wide organizations. There is no doubt that there is a clear value-bias here: when those at the

bottom organize to the exclusion of those at the top the tendency will be referred to as "solidarity;" when those at the top organize at the exclusion of those at the bottom there will be a similar tendency to refer to that as "marginalization!" But this value-bias is built into the entire approach: it is in favor of a horizontal, egalitarian and equitable society at the intra-national and international levels.⁴²

Finally on this list there is *ecological balance*, interpreted relatively narrowly as depletion (of non-renewable resources) and pollution. The term "balance" is highly problematic here. It cannot be interpreted as any policy that maintains status quo since that presupposes that status quo is what we want. But what is needed in terms of natural resources and unpolluted nature depends on the level of the needs, to what extent future generations are taken into consideration, how large they will be and the level of their needs. Needless to say, these entities are interrelated as indicated in the current term "carrying capacity" (of the Planet Earth), and better conceptualization in this connection is in progress.⁴³

It should also be pointed out that the balance cannot be static. A person's health is not a question of having an absolutely constant temperature, but of having within the body the types of restoring mechanisms that can keep temperature fluctuations within bonds. It is not a static nature but a nature capable of regeneration and in balance with the users of nature - here simply interpreted as human beings - that is the issue. In other words, not a static status quo, but a dynamic but stable equilibrium. And in this equilibrium human beings enter in a double role, as parts and as users of nature. This double capacity is probably very insufficiently understood.

At this point we prefer to stop the presentation of the value dimensions since further precization will be given in the next section where the indicators are discussed. Some concluding remarks, however, may be called for.

First, it should be noted that the value dimensions are taken from different sources of human and political goal-setting. Thus, the first value, personal growth, has a nucleus built around the concept of fundamental needs with which most seem to

agree today, as close to universal as it can be. On the paper many would also agree to the almost fundamental needs, but certainly not in practice; and here there is some kind of split with liberal thinking being more concerned with mobility and marxist thinking more concerned with work; with the former building societies quite high on the free flow of persons and ideas but also quite high on unemployment, the latter building societies with the opposite profile.

Beyond these needs, however, there is a vast spectrum of concern for personal growth, for "inner man". It is strongly felt that Asian, and perhaps particularly Buddhist thinking might be the best source of further understanding in this field. Western thinking tends to concern itself with "outer man", in its liberal as well as its marxist versions.

Then there are the next four values: diversity, socio-economic growth, equality and social justice. It is quite clear that they are expressing liberal thinking, the latter two perhaps more in its social democratic, welfare variety.

Then, the next four, equity, autonomy, solidarity and participation are more expressions of socialist, marxist thinking. They are fundamental concerns usually left completely out of liberal approaches to politics in general and the theory of social indicators in particular.

Finally, there is the value dimension of ecological balance, which perhaps had a certain position within what is here called "Asian" thinking, but is certainly a newcomer in Western political thought, both in its liberal and marxist varieties. It might be referred to as ecologism, but can also be given a much broader, less shallow interpretation than it has been given here in terms of depletion and pollution.⁴⁴

Second, granted this diversity in approaches, what is missing? There are certainly many things missing, and it is our hope that readers will point out the shortcomings. Thus, for instance, where is politics? In line with what was said in the preceding section the entire picture should be process-oriented, and that process, the process of value implementation, is politics. All we can say to that is that the value dimensions

are partly conditions for politics (for instance solidarity and participation) and partly consequences of politics (for instance social justice, equality and personal growth through participation in politics). This may indicate that "politics" is too gross as a term, and that it might be better to split ~~it into various~~ components. But the possibility of doing politics should be included.

— Third: given these values and their realization, what kind of a world would it be - and would one like to live in that world? That world would probably consist of a very high number of relatively autonomous units (called societies or not); they would have complex patterns of interaction in all directions and with general participation in universal organizations for the articulation and solution of problems and conflicts; exploitation would be frowned upon in the same way as slavery today; the units would practise a high level of social justice and equality and the socio-economic production would be geared above all to the satisfaction of fundamental and almost fundamental needs. At the same time there would be provisions for rich variety, culturally and structurally, within and between the units. The right to live, to have fundamental needs satisfied and to develop further - in the Western direction of cultivating individual differences, or the more Eastern direction of becoming part of a higher unity - would be basic, as would harmony with Nature.

To this should only be added what has already been said: it is probably the process towards these goals as much as their consummation that gives meaning to these dimensions. But whether interpreted as process or goal: it does look like a world and a society worth striving for, like an image we can use to evaluate our present world - and that was our goal.

3. *The indicators: a preliminary list*

We now have the general principles and the value dimensions and can proceed to the more technical task of constructing indicators. Again, let us repeat that nothing is final, what is presented in this part of the paper is incomplete and suggestive only, for only after some experience in working with these indicators will we know to what extent they are in accordance with the principles, really are indicative of the dimensions in the preceding part, and how these principles and dimensions stand up in such empirical work.

Further, we shall only be working on the first and second levels as defined in part 1 (1) - exploring the *intra-national* and *inter-national* systems, the comparative stage and the relational stage. In other words, we shall be exploring indicators of how good or bad a country is for its citizens, and what good or bad countries do to each other - not how good or bad the world as a whole is (this would push us up the ladders, to levels three, four and five). On the other hand, we shall have something to say on all ten dimensions, which means that the goal is to fill every cell in Table 4 with something meaningful.

Table 4. *World indicators, first and second level: the task*

	First level: intra-national	Second level: inter-national
(1) Personal growth		
(2) Diversity		
(3) Socio-economic growth		
(4) Equality.		
(5) Social justice		
(6) Equity		
(7) Autonomy		
(8) Solidarity		
(9) Participation		
(10) Ecological balance		

There are twenty problems to react to. We could proceed horizontally, but prefer to proceed vertically, starting with intra-national indicators, then attacking the more difficult (because less work has been done) inter-national, relations indicators. We have also indicated a sub-division of the dimensions (in accordance with the "four ideological sources" idea from part 1 (3) and from the end of part 2) because it will soon become apparent that the approach will have to differ somewhat according to sub-division. For instance, the actor-oriented indicators (2-5) apply more easily to first level analysis, the structure-oriented indicators (6-9) more easily to second level analysis, simply because the underlying theories were developed for these levels, respectively.

So, we start with *personal growth*. The basic point here is that this refers to individuals - it has to do with *individual* quantity and quality of life. Of course, each individual is a universe of its own, but it also makes sense to add individual quantity and quality of life to get an impression of the total intra-national situation. What does *not* make sense in connection with this dimension, however, is to compute averages whereby oversufficiency may cancel undersufficiency and give a distorted and misleading picture of the total situation as experienced by concrete persons (thus, we would not make use of life expectancy).

Our approach is clear: it is based on needs, and we start with the most fundamental needs of them all, the right to life. We interpret this as the right not to be deprived of life for clearly man-made reasons, meaning by that all types of *direct*, lethal violence, by commission (homicide, suicide, death due to internal and external war, due to torture or capital "punishment"), and by omission (accidents, natural disasters that could have been avoided or limited with reasonable precautions). (*Structural* violence, however, is a much broader category.)⁴⁵ These indicators are indispensable as an approach to basic security.

We would then proceed and make use of the five plus two = seven needs, and for each one of them the idea of a floor and a ceiling. One could here experiment with several cut-off points for floors and ceilings, and several procedures for arriving at

such cut-off points. But the general idea would always be that *development is the percentage of the population located between floor and ceiling*; in other words the size of the sufficiency group. One should also have separate indicators of under- and overdevelopment (the other two percentages) for although there are only two independent parameters here, they all shed different light on the situation in the country.

If we now for a moment concentrate on floor values only, the indicators would be something like this:

<i>Food:</i>	percentage above minimum consumption level, calories, protein and water
<i>Clothes:</i>	percentage above minimum consumption level
<i>Housing:</i>	percentage above minimum consumption level
<i>Health:</i>	mortality indicator-percentage above minimum morbidity indicator-percentage above minimum
<i>Education:</i>	percentage above minimum schooling level, e.g. literacy or primary schooling; percentage above minimum education level
<i>Work:</i>	percentage holding jobs above minimum level of remuneration percentage holding jobs above minimum level of duration
<i>Mobility:</i>	of persons: percentage free to move of ideas: percentage enabled to express and receive ideas, both of these defined within the country

Except for the two schooling indicators, none of these are generally available today. For food place-specific criteria for fixing the minimum seem to be available;⁴⁷ for clothes and housing it should not be impossible, since in all these cases there would be relatively objective physiological and ecological data and theories to make use of. For the next four that are more social in character no such "objective" or quasi-objective approach exists - for even for the first four there might be no agreement about the precise cut-off points, even if there were agreement about the dimensions and criteria to make use of. Hence people themselves should decide!

When it comes to health, some organization should have the courage to say that a human being has the right to live, say, seventy years and that during these about 25,000 days the person is entitled to be in good health ("physical and mental well-being") X% of the time, X being high in the nineties. In other

words, the person not only has the "right to life" but a right to a certain quantity (longevity) and a certain quality ("health" as generally conceived of) of it - and the country correspondingly should have low mortality rate (below a certain age) and low morbidity rate (for the life-span as a total).

When it comes to education the problem is that education is a much broader category than schooling (and particularly than formal schooling), also including non-formal education, and learning is a broader category than that again, also including non-formal learning. How much of this and in what direction should be considered a minimum seems at present to be beyond our grasp.⁴⁸ For instance, one might argue that in a *good* society (and world) it would mean ability to adjust and contribute to that society (world); in a *bad* society (world) it would mean the ability to revolt and change that society (world). One may easily agree on such trivialities as the need to conceive of learning as both theory and practice, both person-oriented and society-oriented; but that is too crude to define the dimensions, leaving alone the problem of deciding on cut-off points. Hence, one tends to be thrown back on the indicators of schooling.

And correspondingly for mobility and work: the indicators tend to be in terms of transportation/communication volume and jobs, not in terms of the freedom of human interaction (physical, symbolical) and the possibility of creativity, of *praxis*. But even so it should be emphasized that the point here is not whether people do in fact use transportation and communication much, but whether they are free to do so if they should so want to. In other words, this is primarily a question of *human rights* and not of whether they are granted on paper but implemented in practice. In addition to that, however, it is also a question of economic access - clearly, one can have one without the other. Hence the indicator will have to be a composite one. And the same applies to jobs: the point is not whether everybody in fact has a job, but whether everybody may have a job if that is wanted - *including very young people and very old people*. A society that excludes retired people who would like to have some kind of job would therefore be regarded as a bad society in this respect. Then, the index will have to be composite because it should reflect both remuneration level and duration - the former possibly measured as the income needed to ensure (together

with collective outputs from society) above minimum life on all other six needs; the latter possibly measured in terms of number of hours work per week, say, ten hours as a minimum.⁴⁹

All this is within the range of the meaningful and also feasible; but does that also apply to the ceiling in question? For the first two, food and clothing, there is not so much of a problem because there are physiological criteria to go by. For housing one might think in terms of scarce resources. For health and education it is, as mentioned, problematic whether one can talk about a person being "overhealthy" or "overeducated". But it does make sense to talk about people as overhospitalized, overmedicated - or as having too much access to scarce health resources relative to the rest of the population. And correspondingly for schooling: the Chinese very clearly have a schooling policy of not only raising the floor but also lowering the ceiling in order to avoid too much disparity.⁵⁰ Even if one does not agree to that line of reasoning there is scope for an argument in terms of scarce schooling resources: the Ph.D. with twenty years of schooling has gotten a substantially larger share than the primary school graduate who has received only five, six or at most half that many years. The same applies to transportation/communication, as has very forcefully been argued by Illich⁵¹ (in addition to his arguments comes the simple idea of human breakdown due to too much mobility). It may also apply to jobs: a society may become so capital- and research-intensive in its production structure that there is not enough work to go around (structural unemployment). Work may have to be rationed, which is the same as saying that there may have to be a ceiling. One current dystopia is the idea that the ceiling may, in fact, be located below the floor, in which case one gets the image of an automated society where man no longer has to work to produce the goods for the satisfaction of fundamental needs. Since we have emphasized that the floor should be established relative to what people want of work (not what some puritan thinks they ought to do) this is not necessarily a problem: people may engage in other forms of work (artistic, scientific - the usual items taken from the utopia literature), or they may settle down as consumers. Who dares argue against "consuming" love, sex, nature? But there is clearly also the other approach, that of finding more labor-intensive forms of production again, building down capital and research intensity.

We might now make a bold statement synthesizing much of what has been said: *we declare to be above the minimum on these seven needs to be a birthright of man.* It is the task of each government, as a very minimum, to ensure this, and it is already reflected - all seven - in human rights conventions.⁵² But it must not happen at the expense of any other country in the world, and it is the task of any central world authority to ensure this, as will be developed when we come to this point for international level analysis. Because the world is finite it may also be the task of all governments to establish ceilings - otherwise the birthright may quickly become a death warrant.

But having said this it should be added that this is not the same as "quality of life".⁵³ These are necessary conditions, and they may also protect against excessive quantity, but "quality of life" would include more, and more intangible elements. However we define it, it seems we can only get at it by asking people themselves whether they feel they possess it - not by stipulating what is, by our definition, quality of life. At this point some type of survey aiming at satisfaction and alienation (which we have mentioned as an antonym of personal growth) should be included in the repertory of data collection methods.⁵⁴

Here we prefer to stop, since this brings us to the limit of the theoretical explorations of the dimensions of "personal growth" in the first and second parts. It may be objected that we have not mentioned "income" as an indicator, with floor and possibly also with ceiling levels. Of course not; it is very much a means, not an end. There is, however, one important point in that connection: the image conveyed through the speech figure of "need-satisfaction" may connote something passive, something like a captive animal being fed, even pampered in a cage, having all needs satisfied, one after the other. It does not connote activity, active people, an active society.⁵⁵ Income rather than goods for need-satisfaction may permit that because, at the very least, it leads to the activity necessary to convert money into those goods (which does not mean just in terms of activity in societies with supermarkets, credit cards, and mass media for everything including long distance diagnosis). But in that case "activity" should have been added among the needs, and we look

it already is - it is expressed through the term "creativity", or the better term *praxis*. But there are certainly other aspects to "inner quality of life", unexplored by us here - but that will have to wait till the program has progressed further.⁵⁶

We then turn to *diversity*, which, like the following three dimensions, can be dispensed with very quickly, the basic analytical work having been done in the first and second parts, not to mention in the above pages on personal growth. We now leave the level of the individual in a collective setting and turn to the level of society *sui generis* - these four values do not apply to individuals individually. Thus, there is no value attached to the "individual at any given time being 'diverse'", but there is value to a society that exhibits cultural and structural pluralism, thus offering a broader spectrum of stimuli the individual may search for. Of course, diversity would be meaningless unless the mobility (of persons and ideas) mentioned above obtain; it would be an empty form with no content for the people living in that society.

As very simple indicators of diversity or pluralism the following might serve:

cultural diversity: percentage not belonging to dominant ethnic group;
percentage not belonging to dominant language group;
percentage not belonging to dominant religious group;
percentage not belonging to dominant ideological group;

structural diversity: percentage not using dominant institutional form within any given field of need-satisfaction.

These indicators, hence, would favor societies with an ethnically mixed and ideologically diverse population enjoying a range of institutional offers in any field of need-satisfaction. It would disfavor a society that is ethnically, including linguistically and religiously (but these terms are not always related that simply)⁵⁷ homogeneous. In other words, it would strongly disfavor the classical nation state, it would favor the pluralistic rather than the singularistic state,⁵⁸ and not a federal pluralism unless the borders are highly porous for persons and

ideas. This does not mean that one would disfavor in any way the right to live in a homogeneous community, perhaps even in a homogeneous society - provided it forms part of a macro-society with a higher level of diversity. That macro-society does not have to be the country as commonly conceived of, but it should be at hand, reachable; e.g. a group of small, neighboring countries.⁵⁹

Correspondingly, the indicators would disfavor a society with one institutional solution to each functional problem: uniform food, clothes and housing traditions (although this would perhaps rather refer to culture), one schooling system, one communication system (both typical for most European societies, run by the state and from the center). The indicators would favor a society that cultivated diversity in all these matters, in health care institutions, in ways of organizing work.⁶⁰ Obviously, not everybody, perhaps not even most, would agree with this as a value.

It may then be objected that the indicators are too crude to reflect diversity well, since it would give the same value, say, 45%, when this stands for one or for any number of alternatives to the dominant 55%. More refined indicators are certainly available but we have avoided them because of the constraint put upon our choice through the principle of simplicity.

We then proceed to *socio-economic growth, equality and social justice*, which can be handled together since the indicators to be suggested are very simple. First, the question: socio-economic growth of what, equality and social justice as to what? Again the answer is given: primarily with regard to the five plus two needs - society should produce for need-satisfaction and ensure that it is distributed in such a way in the total society that neither excessive inequality, nor excessive social injustice arise. Hence it is a question of knowing the total amount of food (water), clothes, housing, health care, schooling (and other forms of education), jobs and transportation/communication that are made available for the members of the society through socio-economic production, and how the consumption of all these goods is distributed in society in general, and on all relevant background characteristics of its members in particular - such as class, race, ethnic group (including language and religion), sex,

age and birth order, where in the country one lives, ideological belongingness and others. It should be noted in this connection that there is no assumption that the society produces what it consumes and consumes what it produces - trade, import and export - are not excluded, but the validity of the trade will be evaluated on the basis of whether it contributes to the satisfaction of needs so that production brings everybody over the floor level. Later some other requirements will be placed on trade (particularly equity and autonomy), but here the concern is merely whether the total system, of which production is only a part, leads to a certain total level and distribution of consumption. Nor is it obvious that the production has to *grow* for this purpose; it may actually have to decrease. For this reason a better term is simply socio-economic *production*, leaving aside whether it should grow, remain constant or decrease. However, we stick to common terminology in the field,⁶¹ particularly since our indicators here are the same as those commonly found:

SOCIO-ECONOMIC GROWTH: <i>Food</i>		per capita protein availability
		per capita calorie availability
		per capita water availability
	<i>Clothes</i>	per capita textile availability
	<i>Housing</i>	per capita housing availability
	<i>Health</i>	per capita health care availability
		- software: physicians, technicians
		- hardware: hospital beds, facilities
	<i>Education</i>	per capita enrolment capacity ⁶²
		- primary level
		- secondary level
		- tertiary level
	<i>Work</i>	per capita job availability ⁶³
	<i>Mobility</i>	per capita transport availability
		per capita communication availability

The category "availability" is important here: it is what society produces minus exports plus imports for a given year - for instance of food or of physicians. It is not the same as consumption, for there might be an excess at the end of the year - what is actually consumed is reflected on the corresponding list under personal growth (but only partially, as it only says

how many are consuming more than the minimum level and less than the maximum level). Hence, there is room for a third indicator group, this time:

Equality: for all goods *any measure of dispersion or disparity*

- the Gini index
- percentile differences, such as
 $P_{75}-P_{25}$, $P_{90}-P_{10}$, $P_{90}-P_{50}$
- ceiling-floor difference or ratio

The first of these measures informs us about the relative distribution regardless of the absolute distance between high and low (a Gini index would remain the same if one multiplied the income unit or land unit by ten, one hundred); the second measure is designed precisely to give us a measure of the absolute distance or disparity (how many dollars are between the top and the bottom 25%; how many acres are between the top 10% and the bottom 50%);⁶⁴ and the third measure tells us something about the band between which the population is located (this presupposes a developed society where most (above 95%) of the population is in fact located between floor and ceiling). It should be remembered that floor and ceiling are normative concepts, they are not the minimum and maximum actually found in the population (in that case the difference is known as the range), but what ought to be the minimum and maximum. Of all these measures we would tend to leave out the Gini index because of its lack of simplicity.

We then turn to

Social justice: for all goods, and for all background characteristics *any measure of correlation*

- the correlation coefficients
- percentage differences, based on background variables and distribution in under-, over- and sufficiency groups

The first of these measures is a host of correlation coefficients⁶⁵ and we would be inclined to reject all of them because of unnecessary complexity and low validity, particularly the product-moment correlation coefficient. The simplest and perfectly sufficient measure is the percentage difference, whereby the population is

divided according to, for instance, rural/urban or upper/middle/lower class on the one hand, and longevity, food consumption, or access to schools on the other - in the three groups indicated. The average absolute percentage difference might be the final outcome;⁶⁶ and can be used for any trichotomy of the consumption variable if floor/ceiling have not been established. Incidentally, the last example is a reminder that "equality of opportunity" belongs to this category.

Let us then cross the border to the structure-oriented dimensions, starting with *equity*, which is defined as the opposite of exploitation. It is meaningful between individuals, within and between countries, but we leave out the former. Usually there is a relatively clear idea as to who in general has the upper hand and who is the underdog. They can be referred to as center and periphery, respectively, and are defined through the way in which they enter into some kind of division of labor.⁶⁷ Here are five economic dimensions of exploitation:

- (1) *Net capital transfer* - if C_{pc} is the capital transferred in one form or the other from the periphery to the center and C_{cp} is the capital that flows in the other direction, then

$$\frac{C_{pc} - C_{cp}}{C_{pc} + C_{cp}}$$

is one suggestion. When the flow is merely from periphery to center, it attains the value 1; when the flows are balanced, it attains the value 0. The measure can also be negative, there is a net transfer in favor of the periphery which may mean that the periphery exploits the center, or that the political center is "benevolent".

- (2) *Net human resources transfer* - H_{pc} and H_{cp} have corresponding interpretations for human resources, possibly standing for number of tertiary education graduates, secondary education graduates, or for average scholastic attainment in the two flows. Then

$$\frac{H_{pc} - H_{cp}}{H_{pc} + H_{cp}}$$

is one possible measure of the braindrain.⁶⁸ Again, it can be positive, zero or negative with the same interpretations as above.

- (3) *Commodity exchange*. If we look at the monetary value of the exchange between center and periphery we are led to thinking in terms of trade surplus and trade deficit. Instead let us assume that the trade in the direction

from periphery to center is at a (much) lower level of processing than the trade in the opposite direction - usually a safe assumption.

One approach would now be to ask: what price should have been paid for the products from periphery to center in order for those who produced it to have the same standard of living as those who produced the products from center to periphery⁶⁸ - assuming egalitarian distribution in either group. Let N_p and N_c be the numbers of producers, let M be the value actually paid and M^+ be the "right" value. Thus, the right price is defined through the equation:

$$\frac{M^+(T_{pc})}{N_p} = \frac{M(T_{cp})}{N_c}$$

under the assumptions of equal environmental conditions, and equal average number of dependents.⁷⁰ One suggestion, now, would be to use:

$$\frac{M^+(T_{pc}) - M(T_{pc})}{M(T_{pc})}$$

as a measure of exploitation. It is zero when the real price is right, it is 1 for 100% exploitation (the real price is one half of what it should be), 2 for 200% and so on. It may also be negative, indicating that the product from the periphery to the center may be overpriced - *by this criterion*.⁷¹

- (4) Another approach would be in terms of spin-off effects foregone by not engaging in processing but letting raw materials flow out from the periphery. This is hardly operationable today, but if the trade of a country/district looks like this:

	Raw materials	Manufactured goods/services
Import	a	b
Export	c	d

then

$$TCI = \frac{(a + d) - (b + c)}{a + d + b + c}$$

(the trade composition index)

would be a measure of the extent to which the country/district practices the policy of "only importing raw materials, only exporting manufactured goods".⁷² In other words, the extent to which it reserves for itself the right of being a factory, and bases its economy on the assumption that somebody else will play the complementary role.

The difficulty with this measure is that it is relatively reliable, but the validity is not obvious. No doubt it says something about the district's or country's

position in the intra- or international division of labor, and is probably highly correlated with the extent to which a district/country is able to keep spin-off effects for itself. But it is well known that products that function as raw materials for somebody else may be the outcome of a highly complicated extraction industry (e.g. the processing of pure nickel). And manufactured goods may be the outcome of a factory located in an exploited country because of cheap labor and/or to be close to the sources or raw materials, and/or because there are many consumers nearby - in short to cut down on transportation and/or labor costs - but according to a blueprint made somewhere else so that all research and education spin-offs are lost.

In short, the search for a valid indicator of this type has to continue, but in the meantime more experiments should be conducted with the trade composition index, both within and between countries. For that purpose the reader will find in an appendix the work sheet made use of where there is also a third category, "semimanufactured goods", and instead of the formula used above one might use the average absolute percentage difference between import and export for these three "levels of processing", or rather "categories of commodities".

- (5) *Price composition.* A fifth approach would be to look at the price paid in the center for a product from the periphery, and in the periphery for a product produced in the center and compare the price compositions. How much of what the consumer pays goes to the producer district/country, how much to the consumer district/country - counting all costs, for capital, raw materials, labor, patents etc., transportation, taxes of all kinds, customs, insurance, overhead, profit for all components and at all stages of the process.⁷³ Needless to say, in an integrated national/world economy this will not be easy, but not impossible - and highly meaningful. The result would be something like this:

Commodity Producer Consumer	Commodity PC periphery to center	Commodity CP center to periphery	percentage difference
Percentage paid to producer country	PC_P	CP_P	$PC_P - CP_P$
Percentage paid to consumer country	PC_C	CP_C	$PC_C - CP_C$
SUM	100%	100%	0

The general argument would be that the percentage that goes to the producer is smaller, even much smaller, when the producer is located in the periphery - simply because the center controls so many links in the total chain from production to consumption. One major factor here, incidentally, would often be that the products as they leave the periphery are still so cheap that the demand in the center is relatively inelastic. This is well known both

to transporters/insurers, to the importer in the center, not to mention to the government in the center, they can add substantially to the price, not the least different types of taxes,⁷⁴ without being appreciably punished through decreased demand.

The indicator suggested is simply the percentage difference, as given in the Table. There is one rather important difficulty, however: which commodities to choose. Here one might think in terms of an average of all commodities in the two directions, two "typical" commodities (like crude oil from periphery to center, cars from center to periphery) or even the same commodity (sugar one way vs. sugar the other way). Experiments with all three approaches are in progress. These experiments will also penetrate more deeply into the matter by not only asking what percentage goes to the producing district/country, but to the ultimate producers, the workers - in the form of wages/salaries and (possibly) fringe benefits (also indirectly in the form of collective goods paid through taxes). Needless to say, this constitutes a rather comprehensive research program in its own right.

That brings to an end our suggestions so far for the operationalization of this basic dimension in the entire approach; basic because exploitation is a major factor in generating inequality which again is a major factor in producing poverty and impeding any form of personal growth. The reader may have noticed that we have not made any direct reference to "terms of trade". It may be defined as the number of unprocessed goods needed to buy one unit of manufactured goods - how many barrels oil for one tractor, for instance.⁷⁵ However, the third approach above is an attempt in this direction, only that we have tried to go one step further than is commonly done by introducing a criterion for what would constitute the *right* price for unprocessed goods - viz., in terms of the effect the terms of exchange would have on level of living.

No doubt other concepts of exploitation could be imagined. Thus, merely to extract raw materials from someone else, regardless of compensation, may be said to be some kind of exploitation. We probably simply have to experiment with several concepts and see how they rank the countries in the world. And here it should be pointed out that all the indicators above are of a kind which permits us to distinguish between *exploiter* and *exploited*: generally the indicator can be made in such a way that it is positive in the former, negative in the latter case. Thus, the indicator does two jobs: placing countries on either side of that watershed, and informing us about how far from a neutral in-between position they are located.

We then turn to *autonomy* and proceed as we did for equity: we try to deal with the intra-national and international levels at the same time. Autonomy is the capacity to stand alone. It is the capacity for survival in isolation, with a high wall built around the district or country. It is the capacity to withstand any type of power flowing from the outside - normative power (influencing goal-setting), remunerative power (the carrot method), coercive power (the stick method).⁷⁶ It is a concept with many components and like exploitation we are hardly able to capture all of them with some indicators. Unlike exploitation there is also a certain asymmetry here between the two levels of analysis: autonomy is very often seen as a goal at the international level, but not so often intra-nationally. It is perhaps only in China (the People's Communes) and in Tanzania (the *ujamaa* villages) that *internal* autonomy is not only seen as a value in theory but also translated into social practice.⁷⁷ Since this case is rare our reasoning below will be expressed in the international language of second level analysis.

To arrive at a more precise concept of autonomy let us imagine a country with no interaction at all with the outside. By definition it is autonomous. It may have other shortcomings, for instance in terms of fundamental needs, but when there is not even symbolic interaction with the outside it seems unreasonable not to refer to the country as autonomous. But that does not mean autonomy is lost the moment interaction with the outside starts. There is a *ceiling level*, a cut-off point beyond which one might agree to talk about dependence, and the problem with the whole concept is that we are so poorly equipped when it comes to deciding on criteria for the determination of that point. Off hand one might think of two ways of reasoning: the cut-off point is the point beyond which the country would have to undergo dramatic changes if the interaction were suddenly cut off, *and/or* the cut-off point is the point beyond which the country is no longer free to decide in important matters concerning itself.⁷⁸ An example of the former would be the energy dependence of most industrial countries on energy import; an example of the latter would be the capital dependence of most developing countries on capital import. The first criterion is in terms of social continuity, the second in terms of power-over-onself. The latter seems to be the most important of the two criteria - not to

be the effect of a cause located elsewhere - because there is something absolute about autonomy in this sense. When it comes to the former, there is always the problem of whether the society ought to possess social continuity. This is a status quo oriented concept, and is, for instance, not something one would grant, say, a fascist, exploitative society. Nevertheless, we shall explicitly or implicitly be riding on both criteria in what follows.

So much about the *ceiling* for interaction; is there also a *floor* value? We think there is, but it cannot be deduced from the goal of autonomy for one single country. It would stem from the total world need to be connected, for in interdependence there is some element of protection against serious conflict manifestations.⁷⁹ The idea would be that A is less likely to attack B if A in so doing also suffers the consequences of disrupted interaction. There is also the other argument that one might see some interaction as good in itself because it exposes countries to each other and becomes a part of the mobility already on our list of needs. It may be objected that this refers to the free flow of persons and ideas; but the flow of goods is also a form of communication. Hence, we also have two criteria for the location of a floor level - but it should be repeated that they do not derive from autonomy reasoning.

As interaction increases, then, one would in general assume that autonomy decreases or at least does not increase - and that the relation between the two is not a simple linear function but undergoes a steep increase after the cut-off point. To measure the degree of dependence on the outside for any given product one would need data about

- local production	P
- export	E
- import	I

Clearly $P-E+I$ is the local consumption, C (which would include storage); $E-I$ being the external, P the internal component. One definition of dependence would then be the proportion the external component makes of the total consumption, in other words

$$\text{dependence (for any product)} = \frac{\text{Export} - \text{Import}}{\text{Consumption}}$$

Thus, the dependence is zero either when there is no trade at all, or when the export and import balance each other (which means that the trade in that product *could* be cancelled without affecting local consumption). The measure is negative when there is more import than export (as a special case: no export at all); it is positive when there is more export than import (as a special case: no import at all). And this brings us to the important distinction between

import dependence: the country depends on the outside for import

export dependence: the country depends on the outside for export

Typical examples are given above: the import dependence of countries in Western Europe on Arab oil; the export dependence of, say, the US on capital export. Most authors in the field seem to have concentrated on import dependence, however, in spite of the strong and important marxist emphasis on, for instance, the need for capital export from capitalist countries (when internal accumulation leads to sinking profit rates). The World Indicators Program will focus on both types of dependence. They are obviously related to each other, and should not be confused with exploitation (asymmetric accumulation) or need-satisfaction.⁸⁰

It should be noted that the indicator attains the value of -100 when the entire consumption is based on import, and +infinity when the entire production is for export. By suitable norming the measure might be kept within bounds on either side.

Let us then proceed to the "products". Clearly, no country can be only import-dependent or only export-dependent; there has to be a combination of the two forms to some extent reflected in the conventional measure of dependence, *viz.*, the percentage trade makes of the GNP. Other such aggregated measures could also be conceived of, e.g. the average absolute value of the dependence for all "products" (in that case the measure would have to be normed, otherwise export dependence would be permitted to count much more than import dependence). But such aggregated measures do not reflect a very crucial distinction in the whole theory of dependence: the dependence on commodities that constitute a *sine qua non* for survival, and the dependence on commodities that are dispensable. There is a difference between depending on imports of protein to feed the population, and

imports of transistor radios; import of oil and import of protein to feed animal pets; imports of arms for defense and import of arms for aggression. To draw this line, or at least to establish a rough ranking, the theory of fundamental and almost-fundamental needs can be made use of, and this would turn our attention particularly to

<i>import-dependence on</i>	food	calories, protein
	clothes,	textiles
	shelter	elementary building materials
	health	medicine, equipment, physicians, nurses, know-how
	education	teaching material, equipment, teachers, know-how
	work	jobs - created in the country, created in other countries, for migrant workers ⁸¹
	mobility	means of transportation means of communication mass media content news, syndicated materials radio programs TV programs

This list absorb some of the most important cases in the current political debate, significant both as conditions for survival and as conditions for not being manipulated. A government unable to feed its own population is a weak government highly subject to pressures from the exporter(s). But the list is not complete, there are other "products" that do not appear as (almost) fundamental needs at the personal level, but are highly meaningful at the societal level:

<i>import-dependence on</i>	energy	oil, gas, electricity, nuclear energy
	tech- nology	patents, licenses
	capital	grants, loans, investment
	military	hardware: equipment software: in-country training, training in other countries

And then there is, indeed, trade in general, in all kinds of commodities (raw materials, semi-manufactures, processed goods) and

services (transportation, insurance, etc.) - some of it relating to the items we have listed above, some of it not - and if not, then it is of a less essential nature for a discussion of dependence. It should be emphasized, although it is hardly necessary to do so, that whether all these products cross borders under trade or various types of aid programs is a distinction of little or no significance in this connection. And it should also be added that any kind of dependence should be seen dynamically. Short-run dependence may be the means for long-term autonomy;⁸² just as short-run self-reliance may create conditions permitting a certain amount of dependence later on (because of a tradition of self-reliance to fall back upon).

The type of indicators just mentioned seem adequate as a measure of dependence, but they do not measure other negations of autonomy, such as submissiveness, fear, and penetration in a more general sense. Of course, the level of self-respect can be assessed through the level of autarchic goal production, the extent to which the country sets its own goals - but this is not a variable easily operationalized. And the same applies to fearlessness: one could say something about the reason for fear, *viz.*, vulnerability and develop indices of that, but even a highly invulnerable country (due to size, sparsity of population, decentralized economy) might have a highly fearful population and vice versa. Hence, we are probably in an area calling for more subjective indicators, and they would be needed if we want a more complete assessment of the extent to which a country will be a recipient of power pressure.

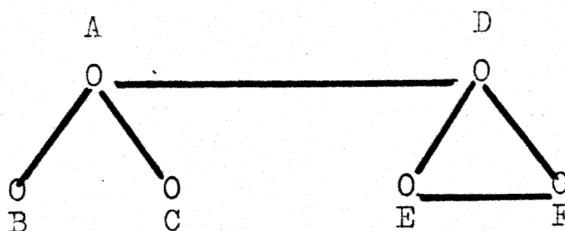
Finally, let us turn to a more structural aspect of penetration. We have talked about penetration as import-dependence - the exporter(s) being the penetrator(s), in terms of products of various types crossing the border (and here it does not matter much whether one looks at migrant workers abroad as export of workers or import of jobs), and in terms of the softer penetration into the human minds in the forms of submissiveness and fear. But there is also a structure of penetration, referred to elsewhere as the *center in the Periphery*,⁸³ the bridgehead the Center has in the Periphery to articulate Center ideology, administer the exchanges that makes up for import-dependence (and the Center's export-dependence) and to mediate the coercive

pressure, usually through the import of military hardware and software (including para-military and police organizations, e.g. for detection, confinement, torture). This group usually has a clear boundary under colonial conditions (white settlers); under conditions of neo-colonialism it is less clear. In one tradition it is referred to as the "national bourgeoisie"; what we are looking for is a generalization of that concept. The number of people trained in the Center country - economically, politically, militarily, culturally, communication-wise - may be one indicator, but not all of them are penetrated, and local training may serve as effectively because it may be moulded according to Center perspectives and needs. Also, it is not only a question of size, but also of the distance to the rest of the population, power-wise, in standard of living, in terms of race and ethnic belongingness. Hence much work should be invested in this problem.

Let us then turn to solidarity and participation where again it does not make much difference whether we think of relations between districts in a country or between countries in the world. In either case it boils down to an analysis of interaction networks, and they can be analysed from two points of view: what does the network look like, and what is flowing in those interaction channels. It is like the analysis of autonomy: dependency had to be disaggregated; first in the direction of fundamental and almost-fundamental needs, then for such products as energy, technology, capital and military hardware/software. Since this theme has been explored in some detail above we shall not repeat those points here, but focus on the interaction network itself.

This network can be analysed by focussing on the autonyms, fragmentation and marginalization, rather than on the positively formulated values. Imagine we have six districts or countries linked together in this network:

Figure 4. Interaction networks



If we for simplicity assume that the value-flow is equal and balanced, then B and C have a partner concentration of 100% (on A), E and F of 50% (on each other and on D) and A and D of 33%. We could do as is customarily done and define partner-concentration (for total trade, import and/or export; or generally for total value-flow, influx and outflux - or just for presence or absence of interaction) by ranking all interaction partners according to the share they take/give of the total interaction volume of that district or country. One could imagine several measures: the percentage that goes to the highest ranking partner, to the three highest ranking ones, or the Gini index of that distribution. But however useful, all these measures have a very important shortcoming: they do not discriminate sufficiently between center and periphery in an interaction network. They give useful information

about one district or country, but do not reflect the context sufficiently. Somehow the measure should give information about the location in a structure rather than, or in addition to, the information contained in the measures above.

The best method available for reducing structures to numbers is found in graph theory.⁸⁴ All one has to do in evaluating a road or airline network is to ask, for any pair of cities or countries, whether they are directly connected or not; and if they are not how many cities/countries the shortest connection would pass through. If we assume that no city/country is totally isolated, then the number of steps from any point to any other point will obviously be some number between 1 and $n-1$, (in the Figure it varies between 1 and 3). Obviously, the lower the average distance (or the longest distance, if we focus on the maximum distance needed to go from one point to the other), the more central the position; the higher, the more peripheral. In fact, one could now compute the average of all the averages, which would give us some good indication of how tightly all n points are connected (if there is direct connection in all pairs this average is 1). And some measure of dispersion would tell us about the total level of fragmentation. The standard score calculated on this basis would discriminate very clearly between center and periphery, taking the whole context into consideration, and would also be comparable from one set of points to another. The only drawback is that it is too complicated, involving a dubious parameter like the standard deviation;⁸⁵ but we have been unable so far to conceive of a simpler measure.

The connections just mentioned could, however, be weighted with the interaction volume so that the average would be weighted averages. One could also establish a cutting point different from 0, e.g. saying that a link exists when more than $X\%$ of the total trade or the trade from or to that point,⁸⁶ passes through it.

Let us then turn to marginalization, which simply means that not only a person, a district or a country are in the periphery, but that an entire set of districts or countries are kept outside - meaning outside the center. Thus, in the figure above D-E-F marginalizes A-B-C or vice versa. The road network in one country usually marginalizes the road network in the neighboring country - we have indicated a road connection between two "capitals" (A and D), nothing more. But who marginalizes whom? As indicated

in the second part of this paper we simply take the position that when the center is more strongly connected among itself than with the periphery then there is marginalization; when the periphery tries to compensate for this it is referred to as solidarity. But that means that some independent criteria are needed as to what constitutes the center, and here one could rely on a combination of exploitation, dependency and fragmentation analysis. Thus, given a certain group of districts/countries and given an idea as to what is the center and what is the periphery some analysis of the level of clustering inside the network should tell us something - but again, we have not been able to arrive at very simple indicators in this connection.

What can be done easily, however, is to develop a measure of marginalization based on the idea of membership in associations and organizations. Whereas the focus above was on bilateral connections, the focus would now be on multilateral connections, for that is precisely what associations/organizations are all about. If all persons or countries are member of the same national and global ("universal") organizations then there is obviously no marginalization in the system - except in the sense that all national organizations marginalizes the rest of the world (in fact, the whole idea of nation-state is institutionalized marginalization). The moment some are not members, one might talk about marginalization at least when they also belong to the periphery. One such implicit association is the association of all persons (countries) with a right to vote, obviously marginalizing the young and the insane/criminal or the non-independent countries; in some countries also the women, the non-white, the illiterate, the dispossessed, etc.

And one could go one step further: marginalization is not only defined through non-membership by the non-inclusion of the periphery, but also through associations exclusively designed for the center. In the world society the European Community and the OECD are typical examples of such "center clubs" (CMEA is not because the criterion for membership is not center-periphery, but socialist-non-socialist). In this field one could also talk about implicit rather than explicit membership. The European Community stipulates explicitly that members have to be European states; other organizations may be "non-western" de facto if not also de jure. Few countries would today explicitly discriminate on the basis of color, very many do so in fact. Minority analysis,

hence, would certainly enter here.

The indicator of marginalization would probably start by establishing lists of explicit and implicit associations and organizations, one list for the open (universal) ones and one for those that are closed (reserved for the center, "regional"); and then try to calculate for each person or country the number of membership held. This would give rise to a distribution for which averages, standard deviations and standard scores could be calculated so as to see better who marginalizes whom.

When it comes to ecological balance there is only one point about the indicators that should be kept in mind. The indicators should have an address. It is not enough to talk in general, abstract, aggregate terms about the effects of depletion and pollution on reserves and resources (including human resources).⁸⁸ It has to be made absolutely clear where ecological imbalances are generated. Disaggregation in the direction of countries is not sufficient, for inside countries the same quest for disaggregation should be pursued with the same zest - but that is not so much our concern in this program. What is needed is not only how total depletion and pollution relate to the total carrying capacity of the biosphere (however that is defined), but also

- how they relate to the carrying capacity of that country
- how their share in the total depletion and pollution of the world compares with what they might be said to be "entitled to", for instance relative to their share of the population of the world
- how they pollute and deplete not only themselves (intra-national problem) but deplete and pollute others (international problem) by importing raw materials (including using other countries' soil etc. for growing food for themselves) and exporting pollutants (the former is actually the same as exporting depletion).

In short, the problem is to get at indicators that give us the structure of depletion/pollution, not only ecological imbalance as a problem. The world has a right to know who are the over- and under-depleters and -polluters, at least relative to their population share, and who are the subjects (senders, exporters) and who the objects (receivers, importers) of depletion and pollution. It should be noted that this is not the same problem: a country may be a net exporter of depletion and yet not an over-depleter; it takes what it can get abroad, but is so big in popu-

lation that it still does not reach the "quota". The first of these indicators will actually reappear under social justice below.

With this we have reached the bottom of Table 4 and as the reader will have noted: for the last five dimensions the intra-national as well as the inter-national level has been covered. What remains is to say something about the interpretation of dimensions (1) to (5) for the inter-national level. As already mentioned these dimensions are better suited for intra-national analysis but they also yield important insight at the inter-national level - particularly when the term "national growth" is substituted for "personal growth".

As to national growth: what does it mean that a "nation" is mature, is grown-up?⁸⁹ Does it have any meaning at all or is it merely an anthropomorphism? We could answer this question in many ways, so let us start by rejecting two of them. Thus, we do not think the term should be given any mystical connotation like "fulfilling its destiny". Nor do we think it should merely mean the extent to which it is "good" to its own citizens and to other countries around the world, for that is already captured (or attempted captured) through the nineteen other dimensions in Table 4. What we do mean is simply this: national growth has to do with the most fundamental of national rights (inspired by, but not the same as human rights): the right to life, to survive unmolested. More concretely, this is where direct violence between nations enters this scheme and in two ways: as aggressor and as victim. We shall count as self-defense the direct violence exercised against structural violence (generally defined as a combination of exploitation, penetration, fragmentation and marginalization; more specifically defined as imperialism within and between countries). Violence against repression may be deplorable, even irrational and counterproductive, but it is not aggression - and aggression is not only with weapons.⁹⁰

National immaturity, consequently, would be the extent to which a nation engages in direct (unprovoked) violence, and in counterrevolutionary violence - violence to oppress violence in legitimate self-defense (what constitutes "legitimate" is no lesser a problem for this project than for others). It would include measures of all kinds of means, hardware and software, used to maintain repressive structures within and between nations - as well as the threat to use them. National growth, conversely, would be the extent to which such measures are not made use of.

As to diversity: we would essentially argue the same as for intra-national diversity, the need for a pluralistic world. The amount of cultural and structural pluralism in the world can, possibly, be measured - but what about the pluralism of one country - apart from the intra-national pluralism? It is also meaningful: a country can resist the tendency to align itself culturally and structurally with dominating countries, thus contributing to total world diversity. This may not necessarily take the form of conserving archaic patterns like insistence on special ethnic forms (including linguistic traditions): it could also take the form of cultural and structural innovation. Needless to say, the extent to which this is done will always depend on the freedom to do so, which in turn is a question of the extent to which the country is in the periphery of a dominance system.

As to equality: again we would argue the same as for intra-national equality, the need for an egalitarian world. And we would do so on the same three bases as for intra-national equality: a country may have too much relative to its own absorption capacity, relative to the carrying capacity of the world, and relative to the ideal of a limited power disparity. The simplest way of developing indicators here would probably be to look at the list of fundamental and almost-fundamental needs again, look at the averages of need-satisfaction (which is neither the same as for dimension (1), nor the same as for dimension (3)) and then look at the distribution of these averages. A floor and a ceiling may be defined; the total world may be evaluated by counting the number of countries (perhaps weighted by their populations) that fall between these two limits, and the individual nation by noting how far it is on either side from a midline between floor and ceiling.⁹¹

As to social justice we have defined it above by means of the idea that "what one has shall not depend on what one is", and many well known principles follow from this at the intra-national level. For instance, how much power one has shall not depend on one's sex, how much education shall not depend on one's race, how much health not on one's class background, etc. But this is justice in individualistic terms, how would the concept apply to countries? What would be international social justice? It is well known that the countries do not have equally much of the "goodies" of the world, but how do we decide how much is the correct, socially just level? What distribution would correspond to social justice to tell whether the actual distribution deviates from the ideal distribution?

In line with the general thinking of this entire paper we want to use the individual human being as the ultimate unit, also as the ultimate unit of justice. To put it simply: we do not think what a country has should be evaluated relative to its industrial potential, its wealth, its area that "to he who has much, more shall be given" and the last two would play on geographical rather than human features of a country. If I were a poor person somewhere and heard that the riches of the oceans could only accrue to me to the extent that the country in which I happen to live happens not to be coast-locked, zone-locked and shelf-locked I would feel that this is less than justice. Hence, we assume the only basis for any such evaluation to be number of human beings, in short the population.

The indicator of social justice would be based on the share a country has in the production and consumption of goods and bads: what it produces and consumes for the satisfaction of fundamental needs and less fundamental needs, what it produces and consumes of means of destruction - such as military hardware and software, and depletion/pollution (the latter have already been mentioned above). Many such items could be imagined - e.g. the share in the world total of teachers (for satisfaction of education needs), and they would all be evaluated relative to the share of the world population - measured in per mille.

x x x

And here we choose to stop; Table 4 has been completed with programs, if not with detailed instructions for the work ahead. The hope is that the reader at least is left with a feeling of relevance, that we are somehow approaching indicators that deal with the world in which we live in a more realistic way than many indicators currently used in governmental bureaucracies. What is now needed is to experiment with them to see how they function in practice, what kind of problems arise - and by that is not meant so much problems in locating data as problems stemming from one terrible question: "but is a high value on this indicator really what we want? - - -".

And in asking that question, as well as other questions, it is our hope that our readers will help; possibly also in giving an answer or two - - -

N O T E S

* The present paper is an outcome of intensive seminar discussions during spring term 1974, and particularly during July 1974. Although written by the senior author (Johan Galtung) everybody else in the group contributed substantially through the seminar discussions, seminar papers, comments and criticisms of draft papers, etc. We are indebted to the Norwegian Council for Research in Science and Humanities (NAVF) for economic support.

1. This program was launched during a private session in conjunction with the International Political Science Associations' world meeting in Montreal, August 1973. It is intended as a loose federation of cooperating institutes and individuals, in various parts of the world.
2. This is a total of 44 countries, including among them the original Yaoundé states (18).
3. Transnational non-governmental organizations; some of them latent - all the women of the world are certainly a potential rather than actual organization.
4. Path-breaking analysis has been carried out in this field by Chad Alger, The Mershon Institute, Ohio State University, Columbus, Ohio - cooperating with the Oslo team in the World Indicators Program.
5. Gandhi.
6. By "resource power" is meant what a country has (e.g. "carrots" and "sticks") to influence others; by "structural power" is simply meant the more implicit power a country has by virtue of its position in the international structure. The former expresses itself in loans and tanks, the latter in exploitation, penetration, fragmentation and marginalization.
7. The painstaking work carried out by the Union of International Associations in Brussels, and particularly by its assistant secretary general, Anthony Judge (also cooperating within the World Indicators Program), has been an indispensable source of insight for researchers in this field.
8. Thus, we feel that the fundamental error committed in the "Social Indicators Movement" so far has been a tendency only to focus on what is here referred to as first level analysis. Countries rank high in terms of what they offer their citizens; nothing is said about the extent to which this happens at the expense of other countries, and what they can do for their citizens. One reason for this is the preponderance of economists and sociologists within this type of movement, blind to obvious facts of international relations. When left to international relations alone, however, the same mistake is easily committed: that of focusing on second level analysis only.

9. In conflict analysis there is the corresponding distinction between interests and goals (see Johan Galtung, Theories of Conflict, forthcoming). These interests actually divide into two: the interest of a person (and a nation) in having fundamental needs satisfied, and the interest in not being in a structure in an inferior position - exploited, penetrated, fragmented or marginalized.
10. No doubt the present paper shows clearly how ~~unable we have been~~ so far to make any progress in this direction. We are still concerned with outer man, but this is not programmatic - only an expression of incapability so far. In a recent seminar (Oslo, 23-24 September 1974) Bo Ohlström (of the Swedish Trade Unions Research Division) and Siri Næss (of the Institute of Applied Social Research, Oslo) made important contributions in this field.
11. See Johan Galtung, The True Worlds: A Transnational Perspective (in print), particularly ch. 3.
12. We are here thinking of the rich tradition initiated by Paul F. Lazarsfeld.
13. See Johan Galtung, Methodology and Ideology (in print), ch. 2, "Empiricism, Criticism and Constructivism".
14. However, when the program has progressed further in getting data on the indicators, empirical analysis might be a good guide for strategic analysis, and this will certainly be within the program.
15. See Johan Galtung, Theories of Conflict, ch. 2.
16. See Johan Galtung and Fumiko Nishimura, Learning from the Chinese, (forthcoming).
17. This point has been forcefully argued by Arnold Toynbee in several articles spring 1974, e.g. in The Observer.
18. Any definition of the purpose of education in general and schooling in particular should probably include one personal and one social dimension, as indicated in this formulation. When only one of them is included obvious political biases are introduced.
19. This is particularly evident in the effort to develop indicators of inner man, personal qualities. And yet it is indispensable: if a society is only able to cater well to outer man, creating beings that are satisfied but unhappy, unable to experience joy and stimulate joy in others, what then is the purpose of the whole thing?
20. Within WIP Anders Wirak is particularly responsible for the effort to make use of Human Rights analysis as one source of inspiration for the development of indicators. But in the particular field of political rights we have so far come to the conclusion that they reflect too well the characteristics of parliamentary and presidential democracies in certain north-western countries in the world to be of any universal interest.
21. For a discussion of the five components, or even phases, of politics, see Johan Galtung, The True Worlds, 4.4.

22. Within WIP Amalendu Guha is particularly responsible for this idea and for the effort to proceed further with the operationalization of floor and ceiling.
23. For the term "maldevelopment" we are particularly indebted to Sugata Dasgupta of the Gandhi Institute of Studies.
24. Not sufficiently investigated in this type of studies, however, are the social conditions that make people react to ambiguity and complexity with, for instance, apathy. It could also be that a much less fragmented and monopolous work-structure, and social structure in general, would prepare people much better for ambiguity and complexity. Nevertheless, it seems that there must be some "outer limits" or ranges somewhere; that human beings are not infinitely capable of absorbing complexity.
25. We are thinking particularly of the euphoric reactions in the streets of, say, Oslo, Stockholm and Amsterdam: no cars, people using the streets, even dancing. How long this euphoria would have lasted is another matter, and the Arabs or the oil companies could not be relied upon to continue the experiment sufficiently to help transforming our overdeveloped societies. Had they done so they might risk losing some good customers.
26. For a detailed account of this technique, see Johan Galtung, Methodology and Ideology, ch. 4, "Diachronic Correlation, Process Analysis and Causal Analysis".
27. Much work has already been carried out in this field, studying the relation between education indicators and development indicators over time - by Johan Galtung, Tord Høivik and Kristin Tørnes.
28. Nevertheless it is strange to see how often the idea of a researcher coming back, collecting new data from the same source and getting the same findings is seen as a test of reliability. Somehow this must reflect a rather static perception of the world, see Johan Galtung, "An Inquiry into the Concepts of 'Reliability', 'Intersubjectivity' and 'Constancy' ", Inquiry, 1959, pp. 213-234.
29. See Johan Galtung, Theory and Methods of Social Research, II, 5.4.
30. The World Future Studies Federation is organizing a course on Future Studies at the Inter-University Centre in Dubrovnik, Yugoslavia, February-March 1975 where the development of this type of methodology will be a major concern.
31. See reference in footnotes 11 and 21.
32. We are indebted to Siri Næss for some ideas concerning this value hierarchy.
33. This is elaborated much further in Johan Galtung, Economics and Peace Research (Chair in Conflict and Peace Research, Oslo 1974, mimeo).
34. But there will be efforts to go beyond, building for instance on Human Rights as a value reservoir, and on the many social scientists who have recently become more philosophical - due to the re-emergence of values as a legitimate focus. We are indebted to Nathalie Ramsøy for the latter idea.

35. The basic point here is to conceive of diversity as much more than "cultural diversity"; the value by means of which liberal society has been able to impose a uniform structure on everybody, for instance in the name of compromise.
36. Great care should be exercised in connection with the idea of "zero economic growth". It does not mean a ban on economic activity, nor does it mean that economic activity has to be constant. It may be interpreted to mean that the value of GNP/capita should remain constant, but since this is a very special way of conceiving of economic activity in general and economic growth in particular (mainly in terms of processing and marketing), the real life implication of that idea are not as important as people may think. One basic point about the indicators program is to try to develop a new language in which such problems can be discussed more rationally than by means of the old "gross national product" language.
37. It should perhaps be pointed out that although we think educational equality has been understudied and been overshadowed by the idea of equality of opportunity, this in no way means that the latter concept is without significance. On the contrary, it should indeed enter our list of indicators.
- 38a. It is very sad to note that marxist economic literature, long on theories of exploitation, is relatively short on its operationalization. Does this reflect a lack of faith of marxist economists in their own theories?
- 38b. Decoupling has in practice been brought about by the center country rather than the periphery country, and been referred to as "economic sanctions". One important characteristic of economic sanctions is that they do not seem to work the way center countries want them to work; on the contrary, they rather stimulate the autonomy of the periphery country by putting an end to exploitation, since exploitation obviously cannot go on in a vacuum. For one analysis of this, see Johan Galtung, "On the Effects of International Economic Sanctions with Example from the Case of Rhodesia", World Politics, 1967, pp. 378-416.
39. These three items seem to be very central to both gandhian and maoist thinking. In a sense they might even constitute a nucleus of an Asian theory of power, based on autonomy rather than on countervailing power.
40. Of course, one can also talk about internal exports, creating new markets inside a country of production. By this is not meant efforts to reach marginalized sectors of population, but efforts to create artificial markets through planned obsolescence, partly through fashion or fads, partly by making products so badly that they have to be replaced.
41. In the World Indicators Program Stein Sjølie has been particularly instrumental in emphasizing this point. It can also be found as a basic constituent in the theory of peace underlying Johan Galtung, Democracy in Peace (Oslo, Universitetsforlaget 1970), particularly part 1.
42. This type of society is spelt out in some details in The True Worlds: A Transnational Perspective (in print) ch. 3.1.

43. In the World Indicators Program Anders Wirak is particularly responsible for this part.
44. At the University of Oslo, Oslo, Professor Arne Næss is particularly noted for his insistence on a distinction between a shallow and deep interpretation of ecological concerns. See article in Inquiry, 1973.
45. For an effort to operationalize structural violence, see Johan Galtung and Tord Høivik, "Structural and Direct Violence: A Note on Operationalization", Journal of Peace Research, 1971.
46. For a discussion of the concept of "sufficiency", see part 1 (6) above.
47. However, our scepticism seems to be in order in connection with making criteria for food consumption too specific. Such criteria tend to "take into account" age, sex or geographic location, on the assumption that the very young, female and those living in the tropics somehow need less. To support this type of contention one points to people in this category, showing that they weigh less, and consequently need less. Maybe they weigh less because one has always assumed that they need less? We just put the question without having any firm view on it, warning against tautological reasoning at this point.
48. For some discussion of these concepts, see Johan Galtung and Veslemøy Wiese, Measuring Non-formal Education (Chair in Conflict and Peace Research, 1974, mimeo).
49. Whether this is meaningful at all in a society with very high productivity is another question, and this is a difficulty even the Chinese may have to face as their technological level becomes higher.
50. See Johan Galtung, Christian Beck and Johannes Jaastad, Educational Growth and Educational Disparity (Chair in Conflict and Peace Research, 1974, mimeo), p. 32.
51. In his book, or perhaps rather pamphlet, Energy and Equity.
52. But human rights, of course, also go much further: only that beyond this they tend to become less universal and more a reflection of Western, even capitalist and Christian society.
53. Most particularly, "Quality of Life" cannot possibly be reduced to ecological parameters like the concentration of CO₂ or SO₂ in the air.
54. A survey of that kind was carried out by the European Center for Documentation and Research in the Social Sciences, Vienna, and contained in the publication Images of the World in the Year 2000, (The Hague, Mouton, 1974).
55. The path-breaking Swedish sociologist, Sten Johanson, has emphasized this point very strongly.
56. One difficulty is, of course, not only the intangible nature of such dimensions, but also the lack of consensus about them.

57. Actually all kinds of combinations of homogeneity and heterogeneity can be imagined.
58. Countries or states that tend to favor singularism also expose themselves to severe criticism, as is the case for so diverse countries as Israel, Pakistan and Ireland.
59. On the other hand, "small neighboring countries" also tend to be relatively similar - see for instance the Scandinavian countries.
60. And here China would actually once more be an example: they have other ways of organizing health care and work than are found in the West, but they also have the western model, emphasizing the importance of combining them under the telling-slogan of "walking on two legs".
61. Upon more reflection on the matter we feel that this was unwise. The reader should interpret this as "social economic production", not growth.
62. This is usually calculated by dividing the number of study places available with the number of the population in the corresponding age category.
63. Similarly, this implies the concept of "working age", but that concept as well as the above concept of "school age" are very dangerous ones because they imply a prejudgment as to the distribution of age groups in the social structure.
64. This measure was used for education, or rather schooling, in the work by Galtung, Beck and Jaastad, quoted in footnote 50 above.
65. For a discussion of correlation coefficients, see Johan Galtung, Theories and Methods of Social Research, ch. II, 2.3.
66. Loc.cit.
67. For a discussion of this concept, see Johan Galtung, "A Structural Theory of Imperialism", the definition of "exploitation", Journal of Peace Research, 1971, pp. 81-117.
68. Of course, corresponding to brain-drain there is also a body-drain; very well known in Europe as "guest-workers"; and in the US it started as slavery. Brain-drain does not exclude body-drain, on the contrary.
69. Of course, this is a difficult idea since those who produce raw materials generally live under very different conditions than those who produce manufactured goods; for instance closer to farms and hence with farm products more easily available. Such factors can, however, be corrected for.
70. As above: the conditions are different, those who live in raw material producing areas generally have a higher number of dependents, and the statistics are less precise. However, this can also be corrected for.

71. Then, of course, there could be other criteria, such as the amount of production factors that went into producing the product, or the amount the consumers are, in fact, willing to pay. What it all amounts to is a distinction between value and price, the latter may be an indicator of the former, but the former can be defined in many different ways.
72. This measure was originally developed by Johan Galtung and Knut Hongrø in the article "A Structural Theory of Imperialism", see footnote 67 above.
73. In the World Indicators Program Stein Sjølie has been particularly responsible for this part of the project.
74. Thus, for gasoline sold to customers in Norway some years ago the Government got 71% of what the customers paid, the multinational corporations 7% - what percentage accrued to the workers who produced the oil nobody seems to know, and there were not very many of them with the high productivity in this field (after initial installations have been carried out).
75. It is, of course, the particular case of processed versus unprocessed goods that is of major importance since this is the type of exchange for which terms of trade are particularly relevant and most often quoted.
76. This seems to be^a particularly important part of US diplomacy under Kissinger: to litter the conflict arena, so to speak, with carrots and sticks.
77. It is actually rather obvious; under the doctrine of a high level of self-reliance one has to utilize local resources to the maximum.
78. This is the aspect of general dependency most frequently picked up by economists, whether of the liberal or marxist persuasions, but we would tend to see it as too limited. A theory of dependence should also include susceptibility to normative and coercive power. In the World Indicators Program Malva Cifuentes is particularly responsible for this part of the project.
79. A condition for this to be the case, however, is that the interdependence is symmetric, i.e. non-exploitative. It is not enough that it is sufficiently low not to constitute dependence.
80. This means that we are collecting material for what might be combined indicators in this field, and this might run in the direction of an indicator of structural violence. But at this stage in the program we prefer to work with the constituents of such an indicator rather than with a composite index.
81. Instead of saying that one depends on the import of migrant (guest) workers, one may of course also say that a country is dependent on the export of jobs.
82. This, of course, is the theory underlying the present dependence of Eastern European, socialist, countries on the import of Western European, US and Japanese technology: it will make us autonomous in the long run. Under some conditions that assumption is definitely correct; it remains to be seen whether those conditions obtain in the countries mentioned.

83. See article referred to in footnote 67.
84. For one good presentation, see Nils Petter Gleditsch and Tord Høivik, "Structural Parameters of Graphs: A Theoretical Investigation", Quality and Quantity, IV, 1969, No.1, pp.193-209.
85. The parameter is dubious because its rationale rests on mathematical convenience (the relations between "moments" and a Taylor expansion) rather than on substantive interpretation.
86. Of course, it should be noted that these two interpretations are rather different: in the first case the perspective is a global group, in the second case it is that of the individual district or country. Analyses that don't exclude the others!
87. One of the best sources of minority analyses in the world today is the theories of reports published from London in The Minority Rights Group .
88. This, of course, is the basic mistake committed by the MIT group that produced the report Limits to Growth for the Club of Rome.
89. On purpose the term "nation" is kept ambiguous: it may stand for an ethnic group; it may also stand for the political unit known as a country.
90. One definition of aggression, based on the analytical tools indicated in this paper would be in terms of structural violence, and one definition of structural violence would simply be "exploitation, penetration, fragmentation and/or marginalization". One would, however, possibly include an element of intention in order to talk about aggression, in other words stipulate that aggression is either direct violence or intended structural violence.
91. We would emphasize again, as for the other indicators in this part of the paper: a procedure of this type would permit us to give some nations the sign plus and others the sign minus, in other words discriminate very clearly between them.