SOCIAL INDICATORS RESEARCH AND THE THEORY OF COLLECTIVE ACTION
The Bearing of Collective Action Theory on the Quality of Life Problematique

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Introduction

Two related and partly overlapping subjects are covered in this paper : social indicators (SI) research and the theory of collective action (specifically, the "public goods theory" pioneered by Mancur Olson Jr.)

First, the abundant scientific literature in the field of SI and quality of life (QOL) research is surveyed. The emphasis here is on certain conceptual and methodological issues. *SI* are generally taken to be *statistical time series that measure significant aspects of a society or some crucial societal subsystem (indicators of "state" or "stock") and changes therein (indicators of "flow")*[1]. An important category of SI consists of devices for analyzing and measuring the final benefits ("outputs") of private and public activities in monetary or non-monetary (i.e. "physical") terms. SI are often contrasted with traditional economic measures and accounts — the Gross National Product (GNP) in particular — whose scope is restricted to market values and, in most cases, to "input" and/or intermediate activities. (This is so because the latter are usually easier to measure in monetary terms than "output" activities. For instance, it is much easier to calculate total expenditure on education than its benefits, say, in terms of achievement or qualification structure). SI, or certain types of them, are supposed to reflect the "QOL", a phrase that became fashionable in the 1960s.

As one would expect, "QOL" is a highly controversial concept. For instance, it is not clear from the bulk of the SI literature whether it pertains primarily (or exclusively) to society at large, to groups of

people, or to individuals (or to all of these). As the philosopher Storrs McCall has pointed out, we do not even know with certainty what *category* the concept QOL belongs to (1976, p. 7). Yet, this circumstance has not kept SI investigators from devising "social accounts systems" that are taken to reflect QOL in one way or another, some of which seem promising indeed The notion thus certainly has some intuitive content, and "is very far from being a neologism like 'quark' that we can define as we will" (ibid.) Any philosopher or meta-scientist who is willing to prescribe or recommend one or more meanings of "QOL" for future adoption by SI researchers must take into account this vague and ambiguous pre-established meaning, which reminds one of Marx' concept of *"Gebrauchswerte"* (use values), and is associated by conservatives (e.g., Mishaw 1973) with a critique of cultural massification and what Wolfgang Zapf once called "gediegene Ueberschaubarkeit" (1972, p. 353).

In order to build a social accounts system (resp. QOL measure system), the appropriate factors must be identified. For a number of indicators (not for all, as will be shown later), the SI model builder — who might want to include his social accounts system in a more comprehensive model or theory of society — will have to develop operational definitions. In order to weigh the different indicators, estimation procedures for relative factor weights have then to be used. These expert techniques remind one of market decisions ("how many units of factor X are worth how many units of factor Y, or of all factors $Y_1...Y_n$? ")[2]. Here, an important problem arises. In advanced societies, i.e. those in which the mass of the population has risen above merely life-sustaining consumption, an increasing portion of consumption takes on a social as well as an individual aspect (Hirsch, 1977, p. 2). A fundamental characteristic of such societies is that their public expenditure — i.e., expenditure on collective goods and services which are publicly induced or provided (cf. Zapf, 1974a, p. 657) — becomes more and more important. Such *(pure) public goods* are defined as goods that "can serve a small or a large number of people at exactly the same total cost"; i.e., the marginal cost of an additional user is zero (Baumol, 1977, p. 521). This characteristic is called supply jointness or undepletability *(indivisibility)*[3]. In addition, public goods are — to a certain degree — characterized by the impossibility of excluding anyone from enjoying them *(non-exclusiveness)*; although one can in principle envisage costly, i.e. uneconomic exclusion devices such as taxes and fees.(still, there are a number of cases in which exclusion is virtually impossible for technical reasons). How is one to assess, then, actual spending habits

on public goods ? Were one to ask an individual how much he is willing to spend on them, he is likely to underrate his willingness; for he knows that if others pay their share, he is going to benefit anyway. On the other hand, as SI and QOL researchers are interested in discovering the needs, wants, and preference orderings of members of a *population*, they cannot look solely at the behaviour of the public institutions that provide public goods, because the latter's preference orderings are not necessarily the same as the former's (cf. Olson, 1965, pp. 6-7). One of the main theoretical tasks for QOL research and SI model builders is therefore — as it were — to make the indivisibility of public goods "divisible" (Bond, 1977, p. 216). One proposal in this direction has been made by Mancur Olson Jr.[4] It is the so-called "sample exclusion" method, whereby a (random) sample of users is forced to pay prices to receive a public good in return for compensatory increases in their income; a procedure which obviously has limitations (cf. ibid.).

The second part of this paper deals with the theory of public goods. This theory is often used by SI investigators as a general theoretical framework that allows them to fit the greater part of their conceptual and methodological concerns in a common frame of reference (cf. Zapf, 1974a, p. 655 a.f.) It seems useful to specify from the outset that social accounts systems not only *report* on the outputs of public goods, but that the information they provide may be — and actually is — viewed as a public good *itself*, a perspective that has important consequences.

We do not propose original insights. Our aim is only to give the philosophically-minded reader a taste of the conceptual, methodological, ethical and political problems dealt with in SI and QOL research — a new cross-disciplinary field of social science that is intellectually fascinating, but full of pitfalls. This is not surprising : after all, these problems are to a great extent as old as philosophy itself.[5] One of the authors who stress the necessity to treat the QOL problematique in a mathematically rigorous way, Mario Bunge, notes not without humour : "Plato was concerned with both Number and the Good. So am I" (1976, p. 154). Only, the methodological and theoretical apparatus which social scientists now have at their disposal allows for the operationalization of a number of formerly philosophical problems and their subsequent scientific treatment. For instance, the SI researcher, instead of asking what "the public interest" really *is*, defines it as the "provision of public goods" (it is taken for granted that the state will *always* justify its actions as being in the public interest). The debate can then be directed to "the amount, composition, and distribution of public goods" or, to put it

differently, "to the efficiency and sensibility of allocating bureaucracies"; and SI research investigates "how bad supplies and undesirable 'mixes' can be eliminated" (Zapf, 1974a, p. 657).

The Roots of the Social Indicators Movement

The SI movement is generally said to have come into existence when Raymond A. Bauer, a social psychologist investigating the impact (the "second-order consequences") of the NASA space programme on the American social environment, published his (1966) volume, *Social Indicators*, which can be seen as the seminal work of the movement. The follow-up to this programmatic work was published one year later by the American Academy of Political and Social Science, under the title *Social Goals and Indicators for American Society* (Gross, 1967)[6].

However, one can point to (US) government reports dating back to the 1920s (Bond, 1977, pp. 180-181) and to the work of certain scholars in the pre-World War II period as early forerunners. As Land (1975, p. 7) remarks, the preoccupation of the grand social theorists of the 19th and early 20th centuries with the theory of social change was not accompanied by comparable efforts to *measure* social change. The idea of actually measuring contemporary tendencies of social change and of estimating their probable future consequences was explicitly stated and then put into shape by William F. Ogburn in the 1920s and -30s (his theoretical position on social change was essentially that of a cultural evolutionist) (cf. Land, 1975, pp. 7-8). In our opinion, however, it is the philosopher Otto Neurath — a prominent member of the Vienna Circle who was also sympathetic to Marxism — who anticipated most of the ideas of modern SI research. As early as 1937, Neurath — preoccupied with bridging the widening gap between economics and sociology — remarked that economists more often than not use concepts such as "the standard of living", "the general welfare", or "the good of the people" merely "decoratively" (in an article published in the famous *Zeitschrift für Sozialforschung* that — to our best knowledge — is yet never cited in SI or QOL bibliographies). Rejecting the subjectivist utilitarian philosophy underlying mainstream economics, Neurath proposes to "coordinate the *totality* of a person's feeling, or that of a group, with his or its entire living condition", and to "investigate the extent to which changes in the "state of felicity' (*Lebensstimmung*) in a positive or negative direction depend upon changes in these conditions" (p. 142). In this view, states of felicity are *not* to be constructed out of single "pleasure and pain quantities", to which

specific parts of the standard of living are then coordinated. Rather, the former are arranged in a *scale*, "in that we say that one is higher, equal to or lower than another". Standards of living are then classified according to the states of felicity conditioned by them. To characterize increases or decreases in the standard of living, certain important determining elements — measured "with the help of units" or at least graded — have to be selected. Neurath calls "standards of living silhouettes" *(Lebenslagenphysiognomie)* the complexes thus composed of various quantities, each of which would have to be measured by specific units. This kind of multi-dimensional approach is now elaborated by SI researchers (e.g., Charnes et al., 1973; von Kortzfleisch, 1976, pp. 108-109). Neurath also considers the weighting problem, the issue of the depletion of social wealth and the question of "money calculations" (vs. accounts in physical terms). Finally, he notices the problems public goods pose for social budgeting (in discussing "the use of public parks"). Unfortunately, Neurath's (admittedly, rather abstract) ideas had no impact whatsoever. The interest in SI emerged only in the mid-1960s.

The new "tendency" the SI proponents wanted to promote is clearly expressed by Bertram Gross in his preface to the (1966) Bauer volume. Gross criticizes the increasing emphasis in major (US) policy documents upon cost-benefit analysis, a technique originally devised by economists (e.g., Layard, 1976) which has shown to be applicable to social and political issues as well (Freeman, 1971). According to Gross, cost-benefit analysis operates "on the premise that any meaningful benefits from government programs can be expressed in dollars and cents" (p. xiii). PPBS (the then newly introduced Planning Programming Budgeting System) as well as other economic evaluation techniques are dismissed for exacerbating "economic Philistinism", and a shift "from Economy to Society" is proposed. The basic assumption underlying the work of Bauer and his associates is that "For many of the important topics on which social critics blithely pass judgment.and on which policies are made, there are no yardsticks by which to know if things are getting better or worse" (Bauer, 1966, p. 20).

To remedy this situation, Gross suggests to build a comprehensive system of SI, inspired by the *systems approach* of authors such as Katz, Deutsch, Almond, Coleman, Easton and Alfred Kuhn. This system should reflect the combined social, political, economic and technological conditions of society.

Gross's article on "Social Systems Accounting" (1966) is often quoted because it contains a number of prophetic remarks. Gross writes :

In any case, *progress in the collection of SI will be slow and uneven.* It would be utopian to expect that any government would set itself to be the task of moving from economic to social indicators in one comprehensive operation. The first social system reports (...) will be fragmentary and exploratory.

Above all, *the maturation of social accounting concepts will take many decades.* Let us remember that it took centuries for Quesnay's economic tables to mature into national income accounting. (Even now) national income experts recognize that they face many conceptual problems that still require years of dedicated attention. By contrast, the formulation of national social accounts is a much more complex undertaking[7]. It requires the participation. of social scientists from many disciplines and the breaking down of many language barriers among them (pp. 270-271).

Critique of National Income Accounting

As the impetus for the development of SI and social accounts systems derived largely from dissatisfaction with traditional economic accounts (Cazes, 1972, pp. 85-88), it seems worthwile to consider the latter's weaknesses and deficiencies in some detail.

The GNP — the most important indicator of a nation's economic "prosperity", or rather, activity — is the sum of all the money paid for the goods that change hands and the services that are rendered in a country during a period of one year. Devised by Simon Kuznets and others during the 1930s, the GNP has shown to be a quite adequate indicator of economic activity, provided it is used in the context of Keynesian models whose prime objective is domestic stabilization policy or models of "growing economies" (in Meade's sense) derived from them (Pfaff, 1976, p. 41; Hirsch, 1977, p. 15). Policy makers as well as the general public tend to view *GNP growth* as a privileged yardstick for economic performance. Being descriptive by its very nature, the GNP is thus viewed as an objective in itself, i.e. used in a normative way (Maestre, 1972, p. 30). This is the ideology of "the more the better", typical of the post-war ("boom") period of extensive economic growth, the consequences of which are well-known ("quantity without quality"), and are criticized by conservatives, liberals and (Neo-)Marxists alike. The proponents of this ideology often neglect the plain fact that just as any other index of overall growth, the GNP takes into account certain aspects of the situation. but leaves out others (Waddington, 1977, p. 79).

In particular, the GNP abstracts from a number of aspects of economic activity that are fundamental to any discussion of the QOL (Boulding, 1970; Maestre, 1972; Shea, 1976) :

— it disregards all that money cannot buy ("free" goods and services) or *does* not actually buy (the *public goods* issue should also be viewed from this perspective);

— it neglects the *quality* of both goods and service. For instance, the quality of education in two nations is not adequately compared if one measures total expenditure on education in dollar terms;

— it does not take into account the *social costs* arising from production (Kapp, 1950, 1972) and — to a minor extent — consumption; i.e., costs which are not "internalized" (e.g., by paying taxes) by those who are actually causing them (cf. Krisch, 1974, p. 13 a.f.) In fact, not only are certain types of social costs not substracted from the GNP; they are even positively added to it (for instance, pollution abatement spending). Public expenditure enters into the GNP in a hybrid way. This is so because public goods have no market value. Thus, it is very difficult or even impossible to discern the *quantitative* component (pertaining to the number of public goods provided) and the *price* component (pertaining to the cost of these public goods) of the nominal evolution of public expenditure (Bombach, 1975, p. 45).

Moreover, the GNP takes into account a number of aspects whose welfare significance is questionable. Tsuru (1972) considers five different types of these elements :

— among the "money votes" that consumers cast and which thus enter into the GNP, some are of the "cost of life"-type : items which fall into the category of necessary cost but which we prefer to minimize (e.g., the costs of heating). These are "intermediate" consumer goods and services which are used as inputs in processes producing "final" goods and services. If expenditure on them has to be increased for one reason or another (e.g., to maintain a given temperature in a cold winter), this appears in the GNP as adding to consumption; but actually it leaves the consumer no better off in terms of the object of his consumption. This is why they are sometimes termed "regrettable necessities". An important methodological problem arises here, due to the fact that the borderline between intermediate and final output is far from clear-cut (it is discussed at length in Hirsch, 1977, p. 57 a.f.);

— a second type concerns the generation of income by otherwise dispensable services, which are made indispensable through built-in institutional arrangements in the society concerned ("interference of income" type). In a truly rational approach (i.e., one that would be

"utopian" in Benno de Finetti's sence[8]), these institutional
arrangements have themselves to be judged by the "impartial rational
test" of personal and social utility (compare Harsanyi, 1977, p. 625);
— a third type concerns the institutionalization of waste;
— a fourth, the depletion of social wealth, i.e., the consumption of
non-replacable resources; and finally,
— the "inefficiency of dynamic adjustment" (e.g., in the case of
realization of land use) should be dealt with.

In general, one could say that the concept of *economic output*
which underlies the economist's standard categorization is
inadequate. The present-day national economic accounts focus
largely on gross output, i.e. "a blown up version of input, measuring
the scarce resources that are used in the process of production"
(Hirsch, 1977, p. 58). However, this output concept is appropriate
only for *pure* private goods, i.e., those "having no element of
interdependence between consumption by different individuals" (p.
7). In advanced societies, the private consumption of one individual
is more and more affected by the private consumption of other
individuals. In this sense, it may be said to contain a *social* element
(think of the *congestion* problems occurring in a growing number of
areas : education, tourism, etc.) To avoid the actual "competition in
frustration" (Hirsch), it seems necessary to coordinate the objectives
of all the individuals concerned, departing from the "principle of
isolated individual striving" in this sphere (p. 10). However, it is
certainly not clear at this moment how a satisfactory collective view
is to be arrived at. So far, GNP critique has in fact been merely a
critique; constructive alternatives have — not surprisingly — been few
in number. In this respect, economics (in particular, the "New
Political Economy" whose scope encompasses more "social" issues
than traditional economic analysis) and SI research still have a long
way to go. Meanwhile, many investigators will continue to use the
GNP — notwithstanding all its deficiencies — as an indicator of both
personal and national prosperity; because they are forced to do so.

An "intermediate" solution to certain problems arising in GNP
calculations may consist in undertaking a variety of GNP
adjustments, directed toward eventually producing something like a
measure of "Net Economic Welfare" (Charnes et al., 1973, p. 1174).
Expenditure on certain public goods and services which "inflate" the
GNP can be substracted; e.g., Olson has proposed to substract a
diseconomy like pollution abatement spending from the GNP.
(Bond, 1977, p. 216). Or it can be eliminated or dealt with in
another way; e.g., Kuznets has proposed as early as 1951 to consider
expenditure on national defense as a prerequisite for production

processes and not as final consumption (Bombach, 1975, p. 47). However, these are but partial solutions. In the long run — as even economists more and more acknowledge — comprehensive social accounts systems will have to deliver the goods.

The Present State of SI Research

Despite its recent origin, the SI movement — which is backed by "political entrepreneurs" (Zapf, 1974a, p. 660) because of its considerable importance for policy making — has yielded already thousands upon thousands of publications, of which, admittedly, only a minor part is theoretically relevant[)]. Accordingly, our exposition will have to be very sketchy. The emphasis is on some of the conceptual and methodological issues involved.

Objective SI. — SI are often characterized as devices for analyzing and measuring the final benefits or "outputs" of private and public activities, preferably in terms of *physical* units (e.g., Zapf, 1974a, p. 653). (It will be shown hereafter that this definition is too narrow). SI could measure, for instance, the effect of the introduction of safer cars on the number of traffic fatalities, or the quality of health care in terms of reducing pain and restoring functional capabilities. Typical "goal areas" SI researchers are concerned with are health, public safety, education, employment, income, housing, leisure and recreation, and population. Within each goal area, a number of "social concerns" are defined, each of which is then measured by one or a number of SI. For instance, some social concerns related to education are : attainment, qualification structure; efficiency, retention, graduation; achievement; adult education; impact of education; organization of the educational system; and cost and expenditure (Bond, 1977, p. 195). The most important category of SI consists of the so-called "objective" SI, expressing sets of objective conditions which are taken to affect the QOL, whether or not they are reflected in subjective reports of the people experiencing these conditions. One is reminded here of Marx's concept of "Gebrauchswerte", as opposed to "Tauschwerte". (Indeed, Marx's characterization of "Gebrauchswert" in *Capital* is unmistakenly objectivistic; although this is often overlooked, even by Marxists.)

It goes without saying that collection techniques for objective SI may vary considerably, depending on the nature of the phenomena to be measured. This immediately poses the problem of the *comparison* of indicators that are expressed in different terms (different kinds of physical units), and of their weighting and

aggregation. But before discussing these problems, some other issues will be raised.

Subjective SI. — While the early beginnings of SI research were dominated by efforts to establish systems of objective SI, the 1970s also gave rise to another concern : the elaboration of experiental measures of responses to perceived life conditions and subjective feelings about what is entailed by QOL (e.g., Abrams, 1973; Andrews and Withey, 1974). The philosophy underlying perceived QOL research is that objective data about phenomena such as crime rates, unemployment etc. "would be lifeless unless some implications about their human meaning could be drawn" (Rodgers and Converse, 1975, p. 128). Subjective SI report on the QOL as people see it. They are achieved through public opinion survey methods (questionnaires, interviews, panel arrangements, etc.) These techniques often involve difficulties that are well-known in social psychology. In particular, people's responses to questionnaires are often influenced by

— how they think the surveyers want them to respond; and

— the personal characteristics of the experimenter himself.

These are aspects of the "demand characteristics" of the experimental situation; cf. the so-called "Rosenthal-effect" or *experimenter bias* (Hobson and Mann, 1975, p. 440). Such problems are not easy to deal with. (We will return to this in a subsequent section.) Moreover, measures of QOL perceptions may embody a significant ideological component. For instance, Buttel, Wilkening and Martinson (1977) have shown that established measures of overall life satisfaction — one of the most prevalent indicators in recent QOL research — as well as measures of service satisfaction, community satisfaction and powerlessness share a substantial amount of common variance with political-economic ideologies. According to their analysis, individual satisfactions with one's life or community are associated with "satisfactions", or conservative orientations, vis-à-vis the larger social order. This result confirms earlier studies by Lipset and others which suggested that conservative political attitudes deriving from respondents' location in the social structure are likely to evoke "satisfied" responses to QOL statements, while liberals or radicals located elsewhere in the social structure tend to be dissatisfied with respect to a plurality of QOL dimensions. Buttel et al. therefore propose to incorporate distinct political-ideological indicators into study designs. One is tempted to generalize these results and to say that *the "frameworks" or "schemata of interpretation" by way of which people organize their experience* (Goffman, 1974) *are responsible (among other factors) for a more or*

less important discrepancy between "objective" and perceived life conditions. According to Buttel et al, "there will always be theoretical and methodological problems in separating satisfaction with the society and its institutions — that is, ideology — from satisfaction with more localized, personal aspects of human existence" (pp. 365-366) (it should be noted that in the latter case, the fit between objective and subjective indicators has empirically been shown to be better). Still, we presume that many SI investigators will feel that in the long run, this separation is untenable. What is needed, then, is a global genetic theory which is able to describe and to explain the generation of and subsequent changes in both "ideological" and "localized/personal" aspects of perceived QOL dimensions. In our opinion, a *typology* of frames — to be developed out of empirical and theoretical investigations by SI researchers — along with a *theory* which would enable us to explain shifts from one frame to another could help to clarify this matter a great deal, in that it would throw light on the actual genesis of the more "constant", i.e. recurrent, ("ideological") building blocks (elements and clusters of elements) of frames. To our knowledge, the "cognitive viewpoint" characteristic of authors such as Goffman (De Mey, 1978) has not explicitly and consequently been applied to SI research hitherto. However, one could quite well envisage such an application — and a fruitful one — in the near future. In fact, we think that the very promising generalized theory of "behavior settings" developed by Fox and Van Moeseke (Fox, 1974) — which will be discussed hereafter — lends itself perfectly to a cognitive approach[1].

Objective and subjective SI systems. — Objective and subjective SI systems should be viewed as complementary to each other. Objective SI systems are often designed to monitor national well-being. *National social accounts systems*, most of them using objective indicators only, are elaborated to remedy the deficiences of GNP and other national economic accounts (e.g., Terleckyj, 1973). Subjective SI are more and more developed to evaluate the impact of specific social programs at the *local* or community level (e.g., "focal local indicators"; Campbell, 1976).

Mixed SI systems. — In a fairly great number of social surveys, both objective and subjective indicators are used that are interconnected in a rather loose way. Some attempts have been made to construct a theoretical framework in which subjective and objective indicators can fruitfully be combined and interrelated. For instance, Hobson and Mann (1975) have proposed and tested a SI — called "Lambda" — with both objective and subjective aspects, which

is based on *time allocation* among the various life activities of an individual. Their "Lambda" indicator is presently used by the Gallup institution. The authors feel that single rate objective SI such as infant mortality, suicide rate or net migration "do not tell us as much about a society as we feel, aesthetically, that a good SI ought to" (p. 441). Therefore, they propose to use conglomerate SI, taking the form of a weighted sum indicator that resembles Thorndike's G. The general idea underlying a "time budget" is, according to its pioneer, Philip E. Converse (1968) that

> time, like money, is a resource that is continually being allocated by the individual, although with varying degrees of consciousness and short-term discretion. Like money, time is thought of as being spent, saved, invested, or wasted. It is presumed that analysis of the structure of time allocation gives behavioral evidence of a peculiarly 'hard' kind concerning individual preferences and values, especially in the more optional forms of time use (quoted in Fox, 1974, p. 52).

By themselves, time budgets provide only "extensive" information, i.e. information on the forms of activities (e.g., the *fact* of watching TV) and no "intensive" information, i.e. information concerning the content of activities and their latent functions to the individual(s) concerned[11] (p. 53). Their usefulness for the study of "life styles" and the QOL is obviously limited in that the results obtained lend themselves to various — and often conflicting — interpretations. Time budgets have therefore to be complemented with subjective information. One interesting feature of Hobson and Mann's approach is that factor weighting is decided upon by the population under consideration, not by the investigators or some other "outside agents", e.g., experts, which is the case in most other approaches (cf. hereafter). Thus, experimenter bias can be eleminated. The elements that are summed up are the frequency functions for the discrepancies that arise "when individuals state the amount of time they would *like* to spend in an activity versus the amount of time they *actually* spend at the activity" (p. 439). Thus, objective and subjective factors are tightly linked.

The nature of SI. — Research on SI — expecially in the pioneering years — was often inspired by a rather naive trust in operationism. Typical of this attitude was, on the one hand, a much too optimistic evaluation of the benefits to be expected from the operationalization of certain "social" variables (a view still implicit in Bossel and Gruber, 1977, pp. 43-44). On the other hand, these variables were

considered crucial by standards that are now more and more taken to be intuitive or "voluntaristic" (Narr, 1974, p. 149). Without exaggerating much, one could say that to its advocates, SI were the magical solution to virtually all fundamental problems encountered in the social sciences. In this climate, an "inflatory" viewpoint on SI developed, according to which a measure of any of the important concepts used in social theories — i.e., any concept important enough to be included as an independent or a dependent variable in a model or theory of the societal system — is necessarily, or by definition, a SI. Even ecosystem variables of the pure physical kind were sometimes termed SI (Bond, 1977, p. 187). This loose and arbitrary usage of the concept of SI was first pointed at by economists and other observers critical of — if not hostile to — the SI movement in general. Consequently, sympathetic philosophers and "metatheorists" dedicated themselves to the task of resolving some of the puzzles which were held responsible for the methodological and theoretical malaise characteristic of the field (causing the same concerns to be repeated and the same problems to be raised endlessly without apparent progress being made). In particular, Bunge's (1975) article on SI (and QOL) indicators has been — and is — very influential.

Bunge starts with the somehow trivial, yet often neglected observation that there can be no such thing as an indicator in itself : an indicator is, by definition, "a token or symptom of some condition". More precisely, "an indicator is an observable trait of a thing (physical, biological, social, or other) that is rightly or wrongly assumed to point to the value of some other trait, usually an unobservable one, of either the same or a different thing" (p. 66). The (I) relation between indicator and indicated may be inaccurate or even "one-many"; if this is the case, one should (if possible) use various indicators at the same time. That is, "an indicator is, more often than not, just one component of a vector pointing to some condition of some thing" (p. 67). But how can we tell whether a certain (observable) variable is — or is not — an indicator of some other variable ? This is a matter of hypothesis, i.e., "corrigible proposition" — not a matter of convention. More precisely, an I-relation is a *well-confirmed hypothesis* (whence it is wrong to call it an operational definition). The moral from this should be clear. According to Bunge, "only a theory explaining the mechanism whereby unobservable X is manifested as observables $Y_1, Y_2, ..., Y_n$ is capable of justifying the choice of the latter set of indicators rather than any other observable traits (Z), to estimate the values of X" (p. 68). This is not to say that "stray" indicators (indicators that are not

included in some scientific theory) — which are often proposed on an intuitive base — are "useless"; only, their usage cannot be justified *in principle.* One needs at least some model in outline. An input-output ("blackbox") model may suffice, but such a model contains no "deep-seated variables" (e.g., social differentiation or cohesiveness), which are usually the most interesting. Bunge has also formalized these ideas. The I_{xy} (order) relation has the properties of being asymmetrical and transitive; moreover, x and y (both are variables in S; x is countable/measurable without the help of any other variables in S) are either functionally (we would rather say : *causally*) related, or statistically correlated. The SI relation holds for x and y in S where S is a set of sociological variables. Bunge constructs quantitative formulas for social differentiation and cohesiveness (which are themselves unobservables) that can be generalized to an arbitrarily complicated social structure. In his (1974b), Bunge defines social structure as a matrix exhibiting the distribution of the total population of a community among the various social groups resulting from the partitions of the society induced by so many social equivalence relations.

Through it cannot be said that Bunge's specific proposals and formalizations have been adapted by many SI researchers, his message has widely been heard (e.g., Buttel et al., 1976; Ruge, 1976). What is needed next is the application of the distinction observable/nonobservable variables (cf. empirical vs. theoretical terms) to current SI typologies. For instance, one could ask whether Land's "analytic indicators" concept (cf. hereafter) corresponds to Bunge's concept of unobservables (wholly or to some extent).

Descriptive vs. normative SI. — We have deliberately kept from rendering the debate over the very definition of SI in detail, because we feel it has been rather sterile. However, one issue which is discussed at length in the literature seems worth mentioning, because it reflects a certain ambivalence in SI research : the debate over the descriptive vs. the normative (prescriptive) use of SI. According to the "normativists", SI must serve as yardsticks to tell us whether things are getting better or worse in society (or in people's perception). Olson's often quoted definition of SI as "measures of direct normative interest" (1969; quoted in Bond, 1977, p. 183). is typical of this position. The "descriptivists" reply that there is no use in imposing normative considerations on objective indicators (which are taken to "loose" their objective character when this happens), because they "add nothing to the scientific development of SI and may even be a retarding force"; and above all, "that there is no necessary consensus on preferred social states" (Land, 1975, quoted

ibid.) They also point to the "counter-intuitive" effects (Forrester) which simulations of societal processes often reveal (Zapf, 1974b, p. 15). To the normativists, the descriptivist's attitude is obsolete. For instance, Bunge, referring to decision theory, writes : "Today there is a tendency to facing values and norms, rendering them explicit and keeping them under control instead of just ignoring them and thereby being at the mercy of tacit valuations and norms" (1974a, p. 2). There is nothing wrong with using normative SI, then :

> For one thing a normative indicator can be just as objective as a descriptive one. Indeed in principle it is possible to determine which value or values of a variable correspond to the goal or goals agreed on beforehand. (Think of nutrition indicators). For another, some of the normative indicators are just maximal (or minimal) values of the corresponding descriptive indicators. For example, the optimal life expectancy may be taken to be the one actually attained in Scandinavia (pp. 2-3).

SI researchers would like to offer policy recommendations; in fact, being (eventually) able to do so is, to many of them, the very reason why the SI movement exists (cf. our chapter on societal monitoring). But this requires them to do what they do not like to do : make value statements. This ambivalence is, of course, not new in social science (cf. Nelson, 1966, p. 314). Those bearing in mind the considerable difficulties uncontrolled value statements can raise should recall that "there is an intelligent way to talk about values : through reducing value statements to weaker value assumptions and empirical propositions" (p. 330; Nelson's illustration, which is taken from traditional consumer theory, in an excellent case in point; it could be inspiring to SI researchers).

The nature of QOL. — As we noted in the introduction, QOL is a highly controversial concept. Bond, after reviewing various proposals with respect to the definition and measurement of QOL, concludes rather pessimistically : "it seems as though the QOL concept (...) is, in the final analysis, a totally subjective concept" (1977, p. 207). Disagreement about the definition of QOL seems to stem essentially from the duality inherent in the concept. On the one hand, QOL is *unique* to each person; on the other hand, elements of it are *shared* by various groups : religious, national, cultural, etc. For instance, studies on the conditions for happiness or satisfaction in many different societies seem to indicate that in general, people are "happiest" when in company of others preferably in large groups, accompanied by food, music, conversation and a good deal of

"milling about" (Shelly, 1968-69, quoted in Charnes et al., 1973, p. 1185). But, as Charnes et al. remark, "one can easily imagine a religious hermit, among others, who would regard these conditions as embodying only sin and unhappiness — in contrast to a more satisfying life (or after life) lived alone with little food and no music" (l.c.) Both objectivist and subjectivist approaches to QOL will have to deal with this duality problem.

McCall, considering some examples (the quality of wine, fabric, air, restaurants, and service) in order to investigate what it is that constitutes the "quality" of a thing — which is only one among its many possible *evaluative properties* — concludes that a common element runs through them all : an "intimate relation to human beings and their needs, wants, and desires" (1976, p. 9). According to McCall, just as the quality of wine is different from the pleasurable taste one gets from drinking it, but is in some way causally connected with it, so the QOL is different from happiness — in the utilitarian's sense — but is in some way causally connected with it. McCall proposes to define QOL in terms of *the necessary conditions for happiness in a given society or region;* more particularly, in terms of the "general happiness requirements" (Rescher) which do not vary from person to person (as is generally the case with respect to idiosyncratic happiness requirements). As he remarks himself, this is clearly an objective approach to the matter. The general idea underlying this definition is that "it is possible to combine, within a single conceptual or methodological framework, the notion of a subjective *indicator* of the QOL with what is *constitutive* of the QOL, the latter being wholly non-subjective" (p. 14). McCall then introduces a working distinction between "needs" and "wants". Only the latter are confined to animate subjects, whence "there is a connection between wants and beliefs which is lacking between needs and beliefs" (White, 1975, p. 111). Wanting (and desiring) are psychological states. According to McCall, since "the presence or absence of unsatisfied wants is a mental or 'subjective' phenomenon, fulfillment of the general happiness requirements cannot lie in the satisfaction of human wants. If anything, it must lie in the satisfaction of human needs" (p. 18).

The fundamental reason why McCall wishes to focus on needs rather than wants is that in this way, the *escalation problem* ("if you give me what I want, I shall stop wanting it and want something else") can be avoided — at least, so he believes. An important consequence is, then, that comparisons of the QOL in societies at different times and places will be possible "whereas if the QOL is measured in terms of wants we shall find (...) that in all societies the

QOL tends to seek a certain equilibrium level" (p. 19) (the latter phenomenon is documented in Seashore's (1974) investigaton of job satisfaction). [1][2]

Mc Call's attempt to overcome the duality problem is certainly appealing. Nevertheless, it seems to us that it is based on some rather shaky assumptions. For instance, it is not clear whether there is (anthropological) evidence for the needs/wants distinction as it is introduced here (i.e., with its implications for the escalation problem).

Comparison, weighting and aggregation of SI. — According to some authors, SI *should* not be (made) comparable, nor reducible to a single metric which would summarize or depict an "overall" QOL (e.g., an index of "Net Economic Welfare"); because one would then again be facint the old problems raised by GNP and related globalistic measures. In their view, we should learn to "think multidimensionally" (e.g., Bombach, 1975, pp. 48-49) and that would do the job. This position is clearly unrealistic in that it overrates the information processing capacity of the human being, be it the Enlightened Politician, Keeney and Raiffa's "Supra Decision Maker" (see hereafter) or the ordinary layman. How is one supposed to handle simultaneously the hundreds or even thousands of information items which the actually existing SI systems already contain ? Operations researchers and management scientists have a great deal of experience with this problem. Their earlier designs of computerized *Management Information Systems* (MIS's) — intended as aids in decision-making — were based on the faulty assumption that the fundamental deficiency under which decision-makers usually operate is the lack of relevant information. Consequently, their ideal was to provide an "infinite pool of data". However, subsequent experience showed that decision-makers rather suffer from *an over-abundance of irrelevant information.* Viewed from this perspective, the two most important functions of a MIS become "filtration" or "evaluation" (i.e., *weighting*) and "condensation" (i.e., *aggregation*) (Ackoff, 1967, p. B-148). This conclusion from OR applies also to the particular type of information systems set up by SI researchers in order to deal with large sets of SI that pertain to the international, national, regional or local level.(Most efforts actually go into the construction of local information systems; e.g., "Integrated Municipal Information Systems" conceived of as a help to local officials have already been tested out (Malizia, 1975); and the concept of a "Citizen Information System" a (M)IS intended to be directed by the citizenry themselves (Johnson and Ward, 1969), seems to be particularly appealing (Charnes et al., 1973)).

Problems pertaining to the comparison, weighting and aggregation of SI cannot be discussed here in any detail. Many different proposals have been made hitherto, some of them involving highly technical intricacies. One could, for instance, mention Drewnowski's (1974) proposal of a *welfare matrix.*=In this matrix [x_{ij}], i ranges over the m relevant social variables (expressing aspects of welfare in terms of "flows" as well as of "stocks"), and j ranges over the n individuals in the population. An interesting characteristic of Drewnowski's matrix method is that *not all entries have to be numerical.* Aggregation (involving adjustment procedures) occurs at three levels. The first step consists in a mapping of the population's distribution on social variable i into a "population index value" I_i. The second level combines subsets of I_i into component indices pertaining to major areas of welfare. Finally, the latter are combined to produce a value of I, an unitary or synthetic index of welfare. I is a function defined on matrices [x_{ij}]. As Fishburn (1976, p. 491) remarks, the jump from [x_{ij}] to $I([x_{ij}])$ is a jump some investigators are reluctant to take. Anyway, the questions of what constitutes an "optimal" level of aggregation for SI cannot be answered once for all. For some purposes, highly comprehensive indicators may be useful (e.g., a "total learning force index", if compared to total labour force). But the weighting procedure that is required for their construction necessarily introduces an element of subjectivity or arbitrariness (Zapf, 1974b, p. 15). Another problem — one which might eventually show to be of more general concern than weighting as such — should also be mentioned in this context : the question of the *existence* of an aggregation function that will satisfy certain criteria (e.g., Drewnowski's I-function, or a similar overall or intermediate QOL index). Parallels to Arrow's "impossibility theorem" may be relevant here (Fishburn, 1976, p. 494); but to our knowledge, they have not been discussed in SI literature yet.

Another less ambitious proposal that seems promising nevertheless is due to Charnes, Cooper and Kozmetsky (1973). They discuss the possibility of an approach that is multi-dimensional and that, moreover, *does not require comparability or even measurability within or between all dimensions.* That is, they admit constructs such as nonmetric spaces or representations; and they allow for goals and priority arrangements which may vary accordingly. This approach is illustrated by reference to examples taken from the "National Accounts Systems Approach" (the so-called *Terleckyj-system*) and the citizen-type pannel arrangements suggested by Johnson and Ward. The most interesting feature of these multiple-dimensional arrangements is probably that they emphasize the need for

considering each (policy) "goal" in its own right and *simultaneously* stress relevant program (and other) interdependencies.

Keeney and Raiffa (1976, pp. 517-519 and pp. 546-547) propose an (uncertainty) model for measuring the QOL, in which a "Supra Decision Maker" is viewed as the "synthesizer" or "amalgamator" of the preferences of the people whose QOL is to be measured (i.e., his preferences depend on the preferences of these people, but not vice versa). The model is of the form

$$u(x) = u_D [u_1(x), u_2(x), ..., u_N(x)]$$

in which x expresses the collectively measured consequences of the Supra Decision Maker's decision that can be described in terms of alternatives X_1, X_2, ..., X_M, which are interpreted as SI; u expresses the Supra Decision Maker's utility function, which provides an attribute U_i, measuring the degree to which individual i's well being is maximized for the consequences x of the possible alternatives; and the N u_i's express the N individual's utility functions. Keeney and Raiffa then interpret u as a measure of society's QOL. In their view, "it is clearly unreasonable to assess u as a function of all the individuals' u_i's" (p. 546). In their alternative proposal, the decision maker attempts to assess his aggregate utility function u(x) directly; x should then be treated as a *proxy* (vector) variable. This is clearly a subjectivist approach in that "the societal Decision Maker balances subjectively and implicitly (his) concern for the feelings of various individuals comprising the societal groups"; he "must do this by vicariously thinking about what they are thinking or feeling" (ibid.)

Summarizing, one could say that only *multiple-criteria decision making* — a discipline which is still in its infancy — will eventually be able to deal with QOL measurement problems in a fruitful way.

Attempts to build QOL and SI systems and a pure theory of social accounts.— The experience of OR-ers and management scientists can also be expressed in another way. To be able to specify what kind of informaton in required for decision-making, one must have at least a rudimentary theory or model of the decision process and the system involved. This is the philosophy underlying Mitroff, Nelson and Mason's cognitivist concept of a "Management Myth-Information System" (1974, p. 371 a.f.) In a MMIS, "information is information *if and only if* it is tied to an appropriate *story* or *myth* that has meaning to the *individual* who needs the information, the *organization* in which he is located, and the *type of problem* that he faces". According to this view, an organization's factual data, no matter how precise or accurate they may be, always have to be

integrated into one or more of the "key motifs" which define the *symbolic nature* of the organization.

In our opinion, it would be fruitful to apply such a "cognitive approach" to SI research as well. In particular, one could relate the MMIS-concept to the "citizen information" type of systems proposed in the literature (Johnson and Ward, 1969; cf. the section on societal monitoring). Alternatively, experts (such as Keeney and Raiffa's supra decision maker) could be conceived of whose information items would be tied to some "story" concerning the population whose QOL is to be measured and their own — more or less interactive — relation to this population.

In a more loose sense, the rationalist (vs. empiricist) approach may yet be said to be the one actually chosen by a growing number of SI investigators, especialy during the last years. The rationalists or deductivists feel that without an integrated system for scanning and selection of possible kinds of relevant data, any collection of indicators will necessarily be *hybrid* (Hirsch, 1977, p. 63). Some of the results already obtained seem rather promising (for instance, Koelle's "Zielorientierte, gesamtgesellschaftliche Simulationsmodell" GESIM (1976); or Pfaff's "Systemische Interaktionsmodell" SYSTIM, which includes six system levels : cultural, social, political, economic, market and physical/ecological (1976)); but they cannot be discussed here. Deductivists thend to favour the modification of already existing economic theories and models — whose fruitfulness is taken for granted — in order to widen their scope to embrace a broader "social system" context. Fox (1974), for instance, uses Tinbergen's classic (1952) formulation of the theory of economic policy — or at least its logical structure — as one of his points of departure. This theory — as well as others — forms the bedrock which is used to integrate a number of concepts, hypotheses and theories developed in disciplines such as sociology, social psychology, political science and moral philosophy. In particular. Fox focuses on
— Rawls' concept of a person's "good life" (determined by a "rational plan");
— Erikson's typology of "life stages";
— Murray's hierarchical constitution of the personality;
— Parsons' "media of human exchange", i.e. non-economic means of providing or denying reward (influence, political power, affect, technological know-how and skill, reputation, faith, etc.);
— Barker's concepts of a "behavior setting" (i.e., major geographical settings in which behavior occurs) and of "zone of penetration" (i.e., the level of involvement in behavior settings; for instance, active functioning or onlooking).

Fox assumes that individuals maximize their return in social media over all the relative behavior settings (and, consequently, time settings). He then develops — formally — the concepts of "social income" and "total income" (the sum of economic and social income), which are measured in monetary terms. Actual (money) estimates of nonmoney income can be based on surveys and objective data. Fox' "pure theory of social accounts" is probably the most promising develompent within the SI movement hitherto. To some authors, it is not as comprehensive as one could wish (for instance, it is not clear how it could deal with the *environmental* concerns adressed in the SI literature) (Bond, 1977, p. 618). We think this kind of criticism is premature as long as Fox' numerous proposals have not been tested thoroughly, which will require intensive further elaboration.

Deductivism vs. inductivism.

When facing the crucial question — what criteria are to be used in order to decide which indicators of state and change are *significant ⊥* —, SI researchers split up in two factions, which can be identified as the *theoretical deductive* and the *empirical inductive* camp (Duncan, 1969).

According to the theoretical deductivists, any collection or development of social indicators series that is not guided by some explicit theoretical framework will inevitably create "a morass of diverse, often conflicting, noncertain, noncommensurable social indices" — to borrow Keeney and Raiffa's expression (1976, p. 547) (for a succinct statement of this viewpoint, see Widmaier, 1972). Some authors are even more pessimistic; they argue that unless one has comprehensive theories (and models) of society at his disposal, "one does not even know what to look at" (Bond, 1977, p. 184). Such theories and models can only result from multi-disciplinary efforts, for economic notions as well as concepts developed in sociology, political science, psychology, decision theory, game theory, and systems theory, have to be welded. They should be able to deal with individual *and* collective behaviour (see, e.g., Bossel, 1977). Much of the information that is needed to establish *national* social accounting systems — to mention just this one example — is related to changes in the average levels and distributions of attributes of *individuals* and *households* (health, education, skills, income, etc.) That is, even in this relatively (!) simple case of social modelling at the *macro*-level, "theories of the individual's development, values, and concerns are at least implicit in the choice of things to be

measured" (Fox, 1974, p. 5); not to mention intermediate "building blocks" of a social-psychological and sociological character that would also better be made explicit.

The empirical inductivists can of course reply that in order to judge the applicability of a deductive model to what is supposedly is modeling, enough warranted information about the empirical subject matter is needed. In their opinion, absence of this kind of information all too easily leads to "undue enthusiasm" for the models that are proposed, and to *"premature* celebrations of what has been accomplished"[13].

Surveying the field of social indicators research, one is then confronted with an apparently paradoxical situation. On the one hand, empirical researchers are producing vast amounts of data that remain largely uninterpreted; they are *measuring without theory.* This easily leads to a breakdown of the society's existing channels for information processing[14]. On the other hand, it is also true that *the theoretical design of comprehensive societal models runs far ahead of the data that are currently available,* as authors engaged in this kind of research readily avow. One important reason for this is that most indicators at present available are — in Land's terms — of the descriptive kind, while the theoretician needs analytic indicators for the purpose of social modelling. *Output descriptive* indicators can be defined as "measures of the end products of social processes (which) are most directly related to the appraisal of social problems and social policy" (cf. Zapf's definition quoted above). *Other descriptive* indicators are "more general measures of the social conditions of human existence and the changes taking place therein". *Analytic* indicators are of more recent vintage; Land characterizes them as "components of explicit conceptual models of the social processes which result in the values of output indicators" (Land and Spilerman, 1975, quoted in Bond, 1977, pp. 184-185). Since analytic indicators have been purged — at least to some extent — of the random variation that occurs in direct observations (and which one finds reflected in descriptive indicators), they may be viewed as the more *basic* indices of the underlying social condition that is measured. An important step towards overcoming the present difficulties has been indicated by Fox (1974, p. 4). He stresses that in the present state of the field, many useful insights can be obtained by applying simple models to existing data, "for example, models involving relationships among groups of two or three variables" (of the descriptive kind). Workers directly concerned with particular data sets have much to contribute here. At the same time, theoreticians can carry forward their more ambitious work, which

may only show to be fruitful in the long run.

SI systems and Societal Monitoring

To the proponents of the SI movement, social systems accounting should eventually be able to provide the relevant information — a public good — needed to formulate strategic objectives for a rational (social) policy at the local, regional, national and international level. Influenced by the ideas of political cybernetics (for a succinct statement of the matter, see Cadwallader, 1959), they tend to regard this information as a crucial variable in the societal system's *guidance capacity*. The same idea has been incorporated into "systems approaches" of various kinds; see, e.g., Droz, 1970, p. 81 a.f.(on social self-direction) and Forrester, Mass, and Ryan, 1976, pp. 53-57. Governing is looked at in the perspective of *societal monitoring*. From this point of view, QOL means the provision of personal and structural conditions which make feasible the "ultrastabilization" (Cadwallader) of individual satisfaction, in the sense of *capacities to learn and change* (Zapf, 1974a, p. 658).[15]

There as well as in other areas of politicization, *resistance to change* — a phenomenon well known to sociologists and political scientists — has to be overcome. The "inertia" many authors have warned against is not only the methodological and theoretical difficulties — which are considerable — inherent in information-gathering (for instance, the problems one faces when trying to reduce statistical biases). They also stem from resistance to the modification of established data collection techniques. After all, there "is nothing in information-producing bureaucracies that makes them fundamentally different from other bureaucracies" (p. 660). Therefore,

> if we eventually have social indicators, social reports, and standardized tests, there is no guarantee that this information will be adequately used or used at all. We know how easily information bits can be utilized as 'vindicators' and 'indicators' (Biderman, 1966, pp. 78-79). We know that *it might be completely rational for a politician not to use information as long as the cost of nonuse is below the benefit of usage* (...) (ibid.) (italics ours).

This is why advocates of more "active politics" among the SI researchers — in particular, those thinking along the lines of Etzioni's (1968) model of the "active society" — tend to define societal

monitoring in a much broader sense than more conservative workers in the field. The latter are favouring information politics of "muddling through" (an approach typical of the proponents of a "realist theory of democracy"; see, in particular, Dahl and Lindblom, 1953) or some other form of *incrementalism*. In societies in which the political system has no *information lead*, i.e., sufficient devices for "prewarning, priority-setting, output control, and so on", more problems arise than can be solved at a time. According to Zapf (p. 652), it may then be perfectly rational for politicians and the general public "to distribute their resources in such a way that at least the worst features of a problem can be worked on before the next crisis comes".

To advocates of more "active politics"' societal monitoring not only has to foster the provision of relevant information; they also want to monitor its distribution and implementation, and, if necessary, mobilize against its nonuse. One could, of course, point to the *utopian* character of this claim in the actual political and institutional context. In fact, the issue of the *countervailing power* (Galbraith) that would be necessary to fulfil it is rarely treated in the literature. Zapf is a noticeable exception. Discussing what constitutes the guidance capacity of a society ("durch Probleminformation autorisierte Entscheidungsbefugnis"), he envisages the *mobilization of latent groups* (in Olson's sense)[16]. Johnson and Ward's *citizen information system* concept (1969) should also be mentioned here (Charnes et al., 1973, p. 1178). In contrast to the usual private management information system, the citizen information system is conceived of as a public system *outside* the control of the concerned governmental entities. It is intended "to be directed by the citizenry themselves, rather than their officials, and (...) to help in monitoring and controlling the latter from the standpoint of the former". One final remark has to be made in this context.

Assume one could sooner or later get at a policy outcome the way advocates of "active politics" see it, i.e. one that would be judged favourable by common consent. Even then, it should pass the "impartial test of social utility" (Harsanyi), if societal monitoring is to proceed in a rational way itself. (Also, even the broadest concensus attainable would not preclude counterintuitive effects from being produces.)

From a methodological point of view, the circumstance that most of the enthusiasm about SI was — and still is — predicated on their ultimate usefulness for societal monitoring has not been without consequences. As Sheldon and Parke put it, "the concepts which

focused much of the early enthousiasm (...) provided an unproductive basis for research", because the essential *theoretical* requisites for developing a system of social accounts were missing (1974, p. 13). It is now more and more realized that *evaluation research* — particularly, social experimentation — must be relied on for evaluation of social programs. Program evaluation requires the evaluator to demonstrate that social programs and not uncontrolled extraneous variables determine the outcomes measured by SI. There is increasing recognition that "from a scientific point of view, the best way to demonstrate this is to incorporate experimental designs into the testing of (social) programs" (p. 6).

SI Research and the Theory of Public Goods

As we noted in the introduction, the indivisibility of public goods is one of the main obstacles SI research has to deal with in order to assess the final benefits or outputs of various kinds of activities. We mentioned the inability of traditional national income accounting to deal with public expenditure in an acceptable way, because public goods have no market price. However, it is not only on the macro-level that conventional devices of output control must necessarily fail. On the micro-level, where the success or failure of particular social programs is at issue (for instance, the impact of an educational reform), the situation is still worse. This is so because the quantity of output of public goods cannot be measured (a consequence of the fact that public goods have no price; cf. the section on national income accounting). To overcome this double information gap, various (experimental) procedures — most of them pertaining to the realm of SI — have been devised hitherto, such as Olson's aforementioned *sample exclusion method*, whereby "a random sample of users are forced to pay prices to receive the good (in return for compensatory increases in their income) and thereby to reveal its output and its worth to them" (1974; quoted in Zapf, 1974a, p. 672).

Because Olson's influential theory of public goods — which was originally enunciated systematically in his *Logic of Collective Action* (1965) — is widely used by SI investigators (among other social scientists) as a frame of reference which allows them to interconnect most of the fundamental topics they are concerned with in a coherent way, we will briefly examine some of its features, in particular, the general philosophy beneath it (i.e., the concept of rationality on which it is based). Due to space limitations, the theory itself — which is rather complex and elaborate — cannot be

recapitulated here in any detail[17]. In the customary view —
underlying Marxian theories of class action, concepts of
"countervailing power" etc. — groups of individuals with common
interests tend to further these common interests. According to
Olson, this view is (usually) unjustified. The core of his theory is that
given the properties of indivisibility and non-exclusiveness — which
public goods exhibit in varying degrees — it is in the "logic" of
collective action for each individual *acting rationally* to refrain from
contributing to the provision of public goods (cf. the "free rider"
phenomenon). An individual's willingness to participate in collective
goods organizations is — primarily — a function of the organization's
magnitude. More particularly, in large organizations (which, in
Olson's view, differ not only quantitatively but also qualitatively
from small organizations), the individual will regard his influence as
(quasi) nil and consequently, abstain from participating (at least
under the "rationality" assumption). Only in the very small group,
"where each member gets a substantial proportion of the total gain
simply because there are few others in the group, a collective good
can often be provided by the voluntary, selfinterested action of the
members of the group" (p. 34). Whence a general tendency in public
goods organizations towards *suboptimality*, which is due to the
non-exclusiveness of public goods.

> Since an individual member (...) gets only part of the benefit of
> the expenditure he makes to obtain more of a collective good,
> he will discontinue his purchase of the collective good before the
> optimal amount for the group as a whole has been obtained. In
> addition, the amounts of the collective good that a member of
> the group receives free from other members will further reduce
> his incentive to provide more of that good at his own expense.
> (p. 35)

Accordingly, "*the larger the group, the farther it will fall short of
providing an optimal amount of a collective good*" (ibid.) Only
"irrationality", coercion or selective incentives (cf. note 16) will,
then, stimulate an individual to participate in large collectives.

In a number of respects, Olson's theory is certainly appealing. In
fact, what Olson offers is a wholly new paradigm that enables us to
look at a number of important issues in sociology, political science
and (new) political economy in a fresh way. Yet, there are quite a
few problems with his approach. One of the more fundamental ones
concerns the motivation behind individual's participation — or
non-participation — in collectives. Olson's argumentation is largely

based on the behavioural postulates dear to traditional economic analysis, in particular, the *self-interest* assumption typical of the classical image of economic man. To be sure, he deals occasionally with non-monetary incentives and acknowledges their power to motivate people to participate in collectives. Thus, he mentions social and psychological "objectives" such as prestige, respect, friendship; erotic incentives; moral incentives; etc. Anticipating some of his critics, he states that the existence of such incentives to group-oriented action "does not, however, contradict or weaken the analysis of this study. If anything, it strengthens it" (pp. 60-61). His point is that social sanctions and rewards, moral attitudes etc. are selective incentives, i.e., that they are among the kinds of incentives that may be used to mobilize a latent group. This position is not as unproblematic as may seem. As Kirsch (1974, p. 40) justly remarks, to an economist who tends to view the "numb rationality" of *homo oeconomicus* as an exact reflection of real-life behaviour, it will be tempting to reject *a priori* any explanation of collective action based on "irrationality" assumptions. If, moreover, coercion is absent, group action will be explained wholly in terms of selective incentives. Though this seems rather unrealistic, it could yet be accepted provided this hypothesis were testable. However, in Olson's theory, the scope of explanations in terms of selective incentives is narrowed considerably, as Olson excludes non-monetary (moral, etc.) incentives from the explanation of collective action (p. 61n). As a result, the theory of collective action itself does not explain as much as some of its proponents would like it to.

Hendriks has proposed to revise — or rather : to amend — Olson's "contractual participation" model (based on the self-interest postulate) by reinterpreting it in terms of a decision-theoretical model due to Lindblom : the *disjoined incrementalism* model. This model can be applied to organizations as well as to individuals; in Lindblom's own words "as one goal is approached, its urgency declines; in the language of some psychologists, its drive value diminishes; in the language of the economist, goals are subject to diminishing marginal utility" (1959; quoted in Hendriks, 1974, p. 32). It is a *non-linear* model of rationality, while in Olson's model, costs and benefits of participation/non-participation are compared in a "linear" way. (The non-linearity concept is discussed in detail in Sfez's monumental (1973) work on decision making, which is not mentioned by Hendriks; cf. Sfez, 1976.) According to Hendriks, an individual who has realized a number of his values "reasonably" (i.e., in such a way that their "drive value" has diminished), may — and sometimes will — "give himself the chance to participate yet" (p.

33). This "dynamic" rationality model is taken to be able to explain the "rising waves of emancipation" — the phrase is due to the Dutch sociologist Wertheim (1974) — observed by historians.

In our opinion, one should even go further and take a much more radical stand toward the rationality concept underlying Olson's theory. We would like to call attention to the fact that the self-interest postulate as it is actually used has been attacked recently by a number of economists, who feel that self interest "in some interpretation is some of the story some of the time, never the whole story", as Phelps (1975, p. ix) put it. Some of them have proposed a "pure theory of altruism" in order to deal with the impressive range of *altruistic behaviour* — i.e., behaviour actuated by a sense of others — in and outside the market place (p. 2). In fact, the recognition of altruistic behaviour is not only important for the explanation of certain resource allocations outside the market (see, in particular, Arrow's discussion of Titmuss' *The Gift Relationship* (1975). It is even more interesting to note that *altruistic phenomena are equally — or perhaps, even more — crucial to the functioning of markets.* Thus, altruistic practices have been shown to *contribute* to the economic efficiency of non-Walrasion markets; involving imperfections of information and foresight in a central way,

> they represent the refusal to deceive through false information (truthfulness) or the refusal to mislead through concealed information (disclosure), or the refusal to test the information costs for others of investigation and prosecution (lawfulness), or the refusal to let uncertainty that others will keep their bargain discourage one's own good faith (trustingness) (Phelps, o.c., p. 5).

In view of this, some authors have even envisaged the construction of a *behavioural theory of philanthropic activity* (Bolnick, 1975). The expediency of introducing "altruistic" behaviour postulates in addition to the self interest postulate in economics may be denied (Van Dun, 1978). But one thing should be clear : the identification of "rationality" and "acting according to one's self interest" will no longer do.

It seems promising, therefore, that in recent political and ethical theories developed along game- and decision-theoretical lines, the importance of altruistic behaviour is acknowledged. For instance, Harsanyi's rule-utilitarian moral agent *regards not only his own strategy, but also the strategies of all other rule-utilitarian agents as variables to be determined during the maximization process so as to*

maximize   social   utility.   In   contrast   to   the   traditional
("act-utilitarian") agent, he is thus "in a much better position to
organize cooperation and strategy coordination among different
people (coordination effect)" (1977, p. 649). In the long run, such
theories and models could maybe be elaborated so as to allow their
application to the type of social situations actually investigated by SI
investigators — and provide a more adequate framework to SI
research than political cybernetics or Olson's public goods theory.

However,   one   should   keep   in   mind   that   game-   and
decision-theoretical models exhibit a fundamental limitation, which
is related to the postulate of methodological individualism pertaining
to them. SI research deals, to a considerable extent, with *social
change* and, consequently, with the generation of, and changes in
norms, values and "societal goals" (Zapf). Ullmann-Margalit has
convincingly shown that through the use of the conceptual
machinery of game theory alone, one cannot explain all that is
explained in terms of social norms. Indeed, the "connotations" of
games — i.e., the non-formal, contextual features of the situation
represented by game matrices — which happen to play an important
role in the "emergence" of social norms, are "chopped off" in the
game theorist's process of abstraction; thus, they remain outside the
game-theoretical treatment (1977, pp. 14-15). It is not clear at the
present moment how this obstacle could be removed.

Aspirant N.F.W.O.

NOTES

[1]Cf. *Social Indicators Newsletter* No 1, March 1973, p. 1. The terms
"significant" and "crucial" occurring in this tentative definition are,
of course, equivocal : what is significant or crucial according to one
observer may not be deemed so by another. In fact, the actual choice
of "significant" societal *goal areas* (pertaining to the economy, the
polity, the cultural or some other societal subsystem, and located at
the international, national, regional or local level) depends to a large
extent on the *political* orientation of the institutions (governmental,
private...) commissioning SI research. It is not surprising, then, to
find relatively few truly revealing indicators measuring, say, the
various dimensions of political (non)participation in most official or
semi-official social reports (e.g., Zapf, 1978, pp. 72-74). The
question "who informs" is, therefore, of the utmost importance (we

will return to this subject later).

The politically induced bias characteristic of the bulk of the SI literature available at the present moment should not be confused with the issue of selecting appropriate *units of analysis* (e.g., the individual, the household, the local community, or the nation), which is of a *methodological* nature. Still, another kind of bias has to be mentioned in this context, namely, the — often implicit and unreflected — recurrence of many SI investigators to some brand of methodological individualism (which, in our opinion, for reasons to be explained later, can never be the whole story).

[2] Cf. Bond, 1977, pp. 215-216. Some specific proposals are discussed hereafter; in particular, Keeney and Raiffa's (1976) model of the aggregate utility function of a societal ("supra") decision maker who "amalgamates" the preference of the people whose QOL is to be measured by balancing subjectively his concern for the feelings of various individuals comprising the societal group (thus "measuring" society's QOL as some — rather peculiar — function of (certain) individual's QOL.

[3] Only in the polar case of supply jointness, additional consumption by one individual would not diminish the amount available to others. Actually, most types of public goods which are relevant to our subject do not belong to this "pure" case; nonetheless, most — but not all — of them display a large measure of jointness (cf. Olson, 1965, p. 14n).

In welfare economics, an important normative conclusion is based on this characteristic. Since it costs society nothing if additional persons use a public good, *there is a net opportunity loss in inducing anyone to refrain from consuming it because of a price charged for the item;* i.e., from the point of consumer decisions, the Pareto optimal price of a (pure) public good is zero once it has been produced (unless there is a budget restraint to be met) (Baumol, 1977, p. 521). However, there may be non-economic reasons for inducing people to refrain from consuming public goods; cf. our discussion of "Societal Monitoring" hereafter.

[4] In an unpublished monograph, "On the Information for Assessing and Improving the "QOL" "; cf. Olson's (1974).

[5] In several of the contributions to King-Farlow and Shea's (1976) reader — e.g., those by Allen and Robinson — the historico-philosophical roots of the quest for a better QOL in ancient Greek philosophy are tracked.

[6] Brooks (1972) gives an excellent review of the history of the SI

movement and the state of the art at that time, with the emphasis on developments in the US. Land (1975), writing for UNESCO, focuses on the relation of SI research to the theory and measurement of social change, developed, among others, by Moore and Sheldon. Land also gives a brief survey of the work done in France, the UK, the GFR, the Scandinavian countries, and Japan.

Since the early 1970s, considerable efforts also go into the construction of *development indicators*, which are incorporated in theories and planning models of "global development" (e.g., Mukherjee, 1976; Yeh, 1976). Global development is identified with such components as satisfaction of human needs for all, equality and social justice, self-reliance, participation, and ecological balance (Galtung & Wirak, 1976, p. 26). Bunge (1974a) has proposed an equity index and a number of independence indicators. For a critical discussion of (under) development indicators that are currently used, see Senghaas, 1977, p. 40 and p. 298. (This author rejects the "integration paradigm" underlying fashionable proposals to establish a "New International Order" and makes a stand for the "dissociation" of UDC's.)

[7] Economics, this "queen of the social sciences" is often praised because it has highly developed quantification instruments at its disposal. However, one should recall what the late Oskar Morgenstern hat to say on this matter (we are quoting from Bauer, 1966, pp. 36-37) : "It is sobering to note that even in areas of statistical reporting that ought to be regarded as 'mature' and which have proved their usefulness, writers raise alarms over serious errors of the most ordinary sort". In national income statistics, Morgenstern identified three principal sources of error : inadequate basic data, an inadequate fitting of the data to the concepts, and inadequate interpolation and imputation to fill gaps. They are responsible for a weighted margin of error ranging from... 10 to 20 % Yet, estimates of rates of error are but exceptionally made (or released) in economics. It is surprising, then, that a critical statistician, writing on QOL measurement, can observe that "up to now, there is no generally acceptable "valid' measurement method of QOL"(Gehrmann, 1978, p. 105) ? QOL measurements are highly influenced by, among other factors, the *selection* of indicators, their *combination* to one set, *weighting* procedures, and different measurement *techniques*. For instance, the testing of a QOL study on cities in which 60 cities were ranked, showed subjective influences resulting in differences up to... 45 ranks ! (6-9 ranks in the "better" cases) (ibid.) Facing this situation, one could seriously question the *actual* use of QOL measures as a help in decision-making.

[8] According to de Finetti, "the Utopia (...) is a scenario of a desirable world (not technologically impossible, although perhaps impossible under the present organisation of society (politics, law, customs, existing distribution of wealth and power))" (1974, p. 335). The "utopian approach" deals, then, with the problem of finding possible forms of organization to implement such a world. The bedrock of de Finetti's — ideal — utopian socio-cultural science will have to consist of analytic ("empty") propositions; its formulations will have to be "neutral" in that "the use of words implicitly suggesting limitations to the range of 'possible' choices must be avoided" (p. 336). Thus, no reference should be made to, say, prices and/or certain other aggregate quantities.

[9] A growing number of R&D programs is concerned with social indicators; they are sponsored by governmental and private agencies as well as by international organizations such as UNESCO and OECD. Some projects are solely concerned with the coordination of social indicators research; in particular, the work sponsored by the Center for Coordination of Research on Social Indicators (Washington, D.C.) should be mentioned. A quarterly journal, *Social Indicators Research*, edited by Alex C. Michalos, is published since 1974. A short review of the field has appeared in *Science* (vol. 188, 16 May 1975, pp. 693-699); E.B. SHeldon and R. Parke are its authors.

[10] In fact, the very concept of a *behaviour setting* derives from Roger Barker's ecological psychology. Fox makes extensive use of this concept in his formal models of "total income" (an approximation of QOL). The cognitive viewpoint is at least implicit in his definition of the utility of a behaviour setting to an individual as "a function of the setting as such, his own role in the setting, and his perception of his effectiveness in the role as evidenced by the behavior of other participants toward him" (1974, p. 22).
Admittedly, social organization and social structure "have been and can continue to be quite nicely studied without reference to frame at all" (Goffman, 1974, p. 13). But as Goffman's *caveat* against applying frame analysis to "the core matters of sociology" seems to be inspired mainly by his fear of *premature* — and therefore, likely unprofitable — applications, this disclaimer should not keep us from envisaging the narrowing, and eventually, future bridging of the gap which now separates research on the organization of personal experience on the one hand, and optimal social organization (for instance, but not necessarily, along the lines of de Finetti's proposal) on the other. Fox' concepts of "optimization for sets of

interrelated behavior settings" and of "optimization for a small community" (1974, pp. 25-26) could be used as a starting point (at least, by those accepting the postulate of methodological individualism).

[11] The plural "individuals" may be used here, as individual time budget models have been extended to larger social units such as households (Fox, 1974, p. 81 a.f.)

[12] One of the most suggestive results of Seashore's psychological and sociological work on job satisfaction is that contrary to accepted belief, job satisfaction does *not* vary as widely as (or more widely than) objective working conditions. For instance, according to an official report issued by the Survey Research Center, for the US, in 1969-70, "85 per cent of the employed adults classified themselves as being, on the whole, at least 'somewhat' satisfied" (1974, p. 161). In Seashore's view, "the occurrence of job dissatisfaction is quite a normal and inevitable thing, and within limits a desirable thing for a society in that dissatisfaction is temporary for the individual and stimulates necessary societal adaptations and changes" (ibid.) He anticipates that "gross rates of job dissatisfaction in any large and diverse society may remain quite stable, or at least display changes that are slow in developing and limited in range". Job dissatisfaction represents, then, an unstable and transitional state, which is sooner or later removed by man's capacity to adapt himself (McCall).

[13] The argument is taken from Handy's criticism of premature formalization in decision theory, game theory and related fields (1970, p. 121). In fact, the "operationalists" within the SI movement — those who stress the primacy of empirical investigations — usually fail to offer a plausible justification of their position. A point similar to Handy's is made by Ullman-Margalit in her discussion of the explanatory power of game theory (1977, pp. 14-15); it will be discussed later.

[14] Michalos (1974) has discussed 17 strategies for reducing "information overload" in social reports. Again, we think it is necessary to point at the conservative bias inherent in a number of such techniques; in particular, those based upon aggregation. It has even been suggested that one might "exclude everything from social reports for which there are no governmental institutions to effect any changes" (Johansson, 1973, quoted by Michalos, p. 128). It is needless to say that such a proposal sets all rules pertaining to the "rational" (Harsanyi) or "utopian" (de Finetti) approach at deviance.

[15] Here, the individual is taken to be the social unit to which the QOL concept applies. According to Zapf, QOL has to mean "that the ensemble of private, collective, and public activities must serve the welfare of the individual during his lifetime (and not the nation, not economic growth, and not future generations)" (p. 658). Individual satisfaction can only be "a point of orientation", because "we know that it may be the product of restricted learning and that it may produce counterintuitive results" (ibid.)

[16] Cf. vols. 8 and 9 of *Qualität des Lebens*, a collection of papers of varying interest and quality prepared for the important German "IG Metall" trade union; particularly, Ken Coates' contribution on QOL and workers' control (Friedrichs, 1975).
According to Olson, only a separate and *selective* incentive (i.e. a positive or negative incentive that does not operate indiscriminately like the public good) will stimulate a rational individual in a large ("latent") group to act in a "group-oriented" way. Large groups are called "latent" groups because they have a latent power or capacity for action, but that potential power can be realized or "mobilized" only with the aid of selective incentives (1965, p. 51).

[17] Summaries and discussions of the theory of public goods are numerous in the literature on sociology, political science and "new political economy". Kirsch (1974, pp. 23-42 gives a good survey and detailed criticism. A diagramamatic-mathematical exposition of the theory as it has been elaborated since 1965 can be found in Chamberlin, 1978.

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