

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

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Batch 72

1. SUBJECT CLASSI- FICATION	A. PRIMARY Social sciences	SE00-0000-0000
	B. SECONDARY Sociology	

2. TITLE AND SUBTITLE
Toward the measurement of social indicators, conceptual and methodological im-
plications

3. AUTHOR(S)
Brooks, R.M.; Wilcox, L.D.; Deal, G.M.; Klonglan, G.E.

4. DOCUMENT DATE 1971	5. NUMBER OF PAGES 38p.	6. ARC NUMBER ARC
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7. REFERENCE ORGANIZATION NAME AND ADDRESS
Iowa State

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)
(Presented at Am. Statistical Assn. annual meeting, Ft. Collins, Colo., 1971)

9. ABSTRACT

10. CONTROL NUMBER PN-AAE-746	11. PRICE OF DOCUMENT
12. DESCRIPTORS Concept formation Indicators Measurement Methodology	13. PROJECT NUMBER
	14. CONTRACT NUMBER CSD-3642 GTS
	15. TYPE OF DOCUMENT

TOWARD THE MEASUREMENT OF SOCIAL INDICATORS:
CONCEPTUAL AND METHODOLOGICAL IMPLICATIONS¹

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¹Journal Paper No. J-7037 of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 1837. A paper presented at the Annual Meeting of the American Statistical Association (August 1971) Fort Collins, Colorado.

TOWARD THE MEASUREMENT OF SOCIAL INDICATORS: CONCEPTUAL AND METHODOLOGICAL IMPLICATIONS

Introduction

The topic of this paper is concerned with the development of a system of measurable social indicators. The widespread interest in social indicators represents a shift in information premises for decision-making in the United States and has come about as a result of a need for more reliable data of transeconomic issues, quality of life, social problems and planned social development. To date, however, the discussion of social indicators has focused more on its potential uses rather than specifying the steps necessary for the development of social indicators. The rapid build-up of interest in social indicator research has produced a rather massive body of literature relative to this topic over the past 5 years (Beal et al., 1971a). As a result, there is no general consensus regarding the nature and definition of social indicators, how social indicators are to be developed and how they are to be used. The objective of this paper is to deal with some of these issues and to attempt to suggest a perspective to provide an adequate definition of social indicators and a strategy for the development of a taxonomy of social indicators for future monitoring of societal conditions.

Social Indicator Perspectives

The failure to develop common perspectives concerning some of the basic issues to be overcome in the development of social indicators has meant that many of the current discussions surrounding this topic must be viewed as apologies for, or criticisms, of the social indicator movement

(Beal et al., 1971b). There has, however, been considerable evidence of maturing of the movement over the past 2 years, with significant efforts being made to cope more systematically with some of these basic issues. Through such efforts, several more clearly defined perspectives and orientations to social indicator research seem to be emerging. The crystallization of these differing perspectives suggest the early stages in the development of "schools" or "persuasions" of social indicators. These perspectives, we believe, reflect the unique interests and needs that underlie individual motivation to obtain better social information.

Since the motivation behind the social indicator movement has generally been the desire to generate usable data, the perspectives and orientation to social indicator research adopted by individuals tend to reflect the unique role each writer visualizes that social indicators will fill in social planning, social development of in the social sciences. These differing perspectives are usually built on quite different definitions of the term, social indicator, and suggest quite different strategies for social indicator development.

Among the various perspectives that seem to be forming within the current social indicator movement, four are especially worthy of brief mention (Wilcox et al., 1971). Perhaps the most common perspective one encounters in current social indicator research is the orientation that regards social indicators as instruments for detecting changes in the "quality of life" of individuals, groups or societies. The strategy of research suggested by this perspective focuses upon the problem of defining "quality of life" and the establishment of quantifiable categories to measure

variations in crucial social components of human life conditions. The problems posed by this perspective are, perhaps, the most difficult to quantify and raise issues that cannot be disassociated from normative interests. Current research efforts that reflect this orientation include the work of Becker and de Brigard (1970), Harland (1971), and Jones and Flax (1970).

A second perspective tends to regard ⁽²⁾ social indicators as instruments to monitor progress toward societal goals. This approach has often been suggested as an alternative to the quality-of-life emphasis in an effort to reduce the normative implications inherent in the term quality of life. The problem of establishing generally agreed upon and clearly defined sets of goals, however, has proved highly elusive. One specialized application of the goals approach focuses on program evaluation, in which the goals are largely established by those concerned with the direction of the program. Much of the work of the federal government is reflective of this perspective including the National Goals Research Staff (1970), HEW's work on the preparation of an annual social report, Toward a Social Report (U.S. Department of Health, Education, and Welfare, 1969), and Vestermark's (1968) efforts to develop indicators of social vulnerability.

Another perspective that seems less common but still an integral part of the indicator movement tends to view ⁽³⁾ social indicators primarily as social statistics. The thrust of this type of research focuses on an attempt to assess various aspects of social life by reporting statistical series that reflect change in these social components through time. Rarely does one find any serious effort to show cause, effect and interrelationship between variables or to include such statistics in a larger theoretical system.

To gain a clearer picture of this perspective, the reader may find it helpful to examine the work of Tunstall (1970), Agency for International Development (1971), Drewnowski (1966, 1970) and some of the statistical data developed by the United Nations Research Institute (1961, 1966a, 1966b, 1966c, 1969, 1970).

A fourth perspective, which tends to be more reflective of the work of social scientists, views social indicators as social statistics that measure changes in variables that are components in a social-systems model. Here, the concern is with the monitoring of systems performance and the cause, effect and interrelationship between variables in a social system and how these values change through time. For examples of this perspective, see: Land (1970, 1971), Warren (1970a, 1970b), Wilcox and Brooks (1971a), and Brooks (1971).

This fourth perspective, we believe, offers the most in terms of advancing the development of social indicators. This system, once developed, would show interrelationships between variables and the assessment of causal factors that are necessary in making effective policy decisions. It also minimizes the problem of developing indicators of expressed normative interests of narrow segments of society and refocuses our attention on the monitoring of actual performance of social systems and social groups more objectively. Several general systems models exist in the social sciences; few of them, however, have been explicated to a quantifiable level necessary for the monitoring of social change. Therefore, we believe that the initial step in developing a system of social indicators must focus on the problem of developing a taxonomy of social conditions related to a general model that can provide an explication of quantifiable categories.

Taxonomies of Social Indicators

In the past 3 years, several social-science researchers have addressed themselves to the task of explicating a taxonomy of indicators for such abstract concepts as "quality of life" and the "general good." The attempts were exploratory, but optimistic, as they tried to explicate these higher-level concepts into lower-level indicators that could be eventually quantified.

Rossi (1971), from a social psychological perspective, sought to establish a conceptual scheme to review the component parts of the community. For Rossi (1970: 77), social indicators should be based on a model of how social life "works"; they should be small in number and related to potential social policy. The model of "how social life works" will have to be generated because past models are not helpful for the current social indicator needs. That indicators ought to be related to potential social policy is a difficult objective to achieve since current social policy at the community level is not clearly defined.

Becker and de Brigard (1970) attempted to develop a taxonomy of community, based on action planning, with a goal orientation. To these researchers, "quality of life" represents society's overall objective, with the three subcategories of physical, social and economic representing basic societal environments. They suggest that lower-level elements of quality of life are education, housing, health, social services, economic development, public safety, transportation, culture, interpersonal communication, local government and natural resources.

A third attempt of recent years to develop a taxonomy of indicators is presented by the Stanford Research Institute (1969), Toward Master Social Indicators. Master social indicators may be viewed as highly abstract concepts, such as abundance, or intermediate abstractions, such as wealth, utilized in a heuristic model of major societal concern. Their model seeks to demonstrate how low-level concepts can be aggregated into master social indicators of two main elements, one relating to the individual and, the other, to the social system. The elements they chose for aggregating are the components specified in the HEW document of Toward a Social Report.

Each of these three strategies for developing a taxonomy of indicators has started with an optimistic attempt to assess overall quality of life at some macro level. Although two of the studies related their taxonomies to the community, selecting quality of life as the general goal is viewed as macro and presents problems in explication and future analysis. All three strategies have indicated the frustrations in attempting to generate a taxonomy to measure the complexity of social life. Yet, all might agree that the current level of social indicator sophistication is at the threshold of what must ultimately be accomplished if useful information is to be provided for future decision-making. The proposed task is difficult and well recognized as such by Hagen (1962: 4) who states:

As judged by the history of the physical, biological, and social sciences, study in any field is apt to begin with a none-too-ordered description--followed by a cataloging on bases that seem to make sense. As understanding grows, the systems of classification become more closely related to the functioning of interacting elements. Gradually, generalizations about functioning are reached which are useful in predicting future events. As the generalizations gain rigor, they take the form of

analytical models of the behavior of the elements being studied. They take the form, that is, of systems.

The three studies discussed thus far have demonstrated the none-too-ordered description of generating taxonomies of social indicators. As yet, the current status of social indicators lacks this rigor and certainly has not acquired the model of the social system described earlier. This will take much concerted effort on the part of social scientists, and continuing to develop taxonomies at perhaps lower levels of abstraction and that are more complete seems a logical step in this larger task. These are lofty goals, and our present abilities to accomplish such tasks are somewhat inadequate. Yet, this challenge may prove to be one of the major contributions to the development of sociology as well as in providing societal guidance in the near future.

Basic Community Model

As previously indicated, trying to adapt studies using macro concepts, such as quality of life, to communities is highly complex and thus far has not proved very successful. Quality of life seems to be a relative term and can only be understood after a thorough examination of the empirical referent in question. If one were to delineate the major functions performed in communities and seek to measure that performance, it might be possible to make some statement about that community's level of living or quality of life. What we wish to propose is to focus on the community as the unit of analysis, rather than the state or nation as is commonly selected; also, rather than focusing on abstract goals, such as the "general good" or "quality of life," we propose that we focus on the basic units and

processes of the community system as the phenomena to be explicated and for which social indicators will be developed. To date most studies of community have emphasized economic variables and have not looked at the total community as it relates to the environment.

The definition of social indicator utilized in this paper requires such an indicator to be a component in a social system, collected over time and aggregated or disaggregated according to the specifications of the model (Land, 1970). Furthermore, these indicators must be readily combined measures of indicators from lower levels of abstraction that can be controlled to "show the partial deficits of given subgroups attributable to given causes" (Coleman, 1969:96). To achieve this task will require a broader model than those typically embraced by sociologists and indeed, social scientists. Perhaps, the theoretical model currently in use in sociology that most systematically attempts to relate human behavior and social organization to environment is the ecological model.

In contrast to other models of society, ecology includes more encompassing variables that are judged useful in developing multiple profiles of social and physical aspects of the community. For this reason, we believe that the contributions to the ecological models by Hawley (1950, 1969), Duncan (1961, 1964, 1969), and Duncan and Schnore (1969) might, with some adaptation, help us to achieve a general model of the community ecosystem for understanding and monitoring system performance. If social indicators are to be useful in monitoring the performance of this ecosystem, one obviously must specify the basic components in such a system. Perhaps one of the reasons that present social indicators have not been particularly

useful is because there is no general model available capable of allowing a wider range of explanation from which appropriate social indicators can be explicated. A model is needed that is capable of showing the processes that take place and the implications they may have for the conditions of man's social life and the environment in which he lives. It appears that ecological models may come closer to monitoring the community system in this broader sense than do present sociological models of society that focus primarily on the internal social and psychological dynamics of social systems.

Community Ecosystem

The community ecosystem is composed of several elements similar to the ecological complex described by Duncan and Schnore (1969). The community ecosystem, however, is conceptualized at a lower level of abstraction than is the ecological complex and will demonstrate slight modifications. This community ecosystem is more than the traditional social-systems approach to the study of social phenomena. It is attempting to include all meaningful activities at the community level that impact individuals in the system. The four elements, which we believe can serve to describe important aspects of life conditions, are environment, population, social organization and culture. These are presented in Figure 1 and will be briefly defined before a partial explication of one of the elements to lower level indicators.

Environment

The environment, according to Hawley (1950: 12) "is a generic concept under which are subsumed all external forces and factors to which an

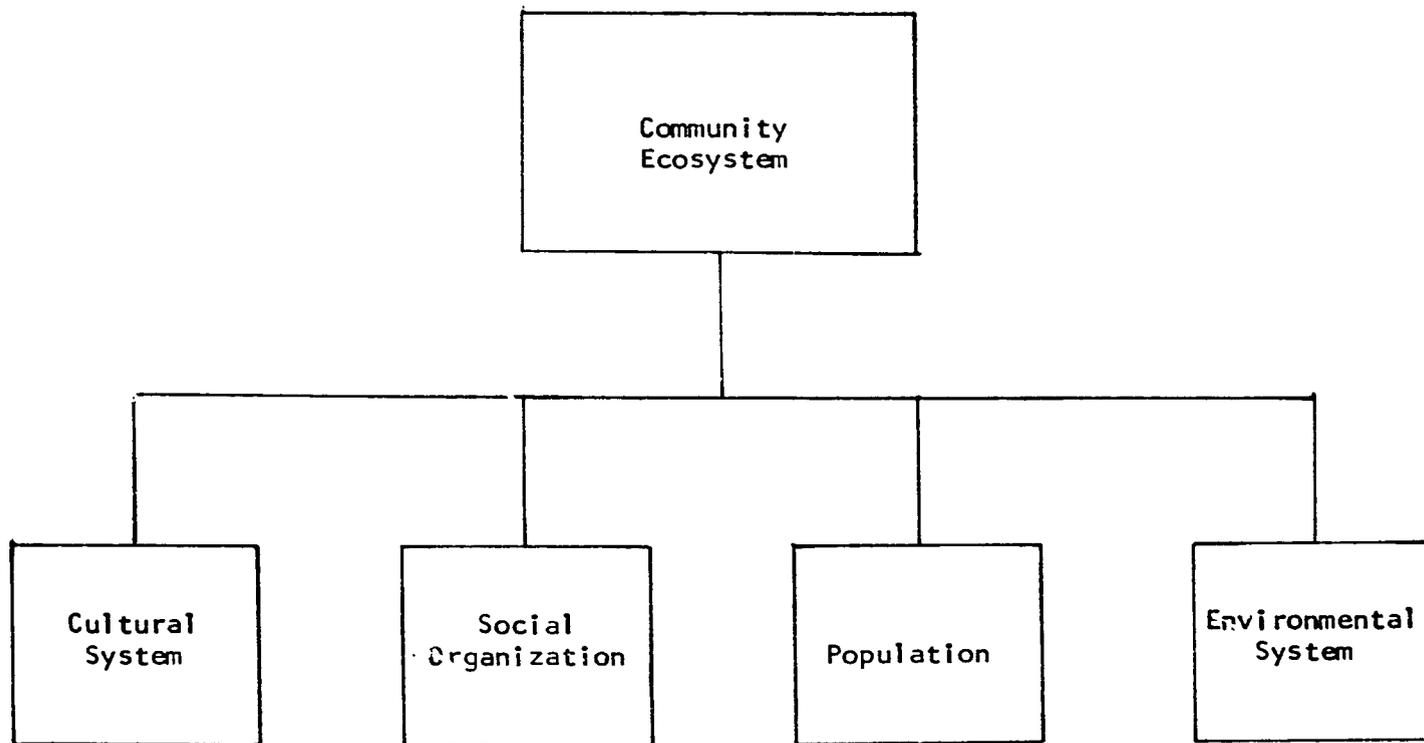


Figure 1. Basic model of the community ecosystem

organism is actually or potentially responsive." Populations have to exist in some form of natural environment, cope with this environment, and learn to adapt to its ever-changing conditions. In general, the environment sets limits to the size of population it can sustain. Man, with his technology, however, alters it sufficiently to allow for population growth.

Social organization

Social organization is the social patterning that takes place in the population as individuals compete for limited resources to sustain life. These activities must be regular and systematic, regardless of the size of the social group. An essential component of organization is that smaller units come together to form larger units or wholes. According to Gould and Kolb (1965: 661):

Social organization is a relatively stable set of functioning interrelations among component parts (persons or groups) which are not possible, by themselves in the components. Social organizations evolve as structures of such relations in such a way as to fulfill functions in a manner more efficient and durable than could be achieved by unorganized persons.

Population

In statistics, a population is defined as an aggregate of objects about which information is desired, but for which only a sample is selected for investigation. For social sciences, population generally refers to the number of inhabitants of a given territoriality and frequently is concerned with the characteristics of individuals. Population will therefore be concerned with more than demographic characteristics. Our major interest will be with developing multi-dimensional profiles of those individuals and sub-groups within the community and not the personality system. This system of

social and physical characteristics of individuals will be explicated, in part, into a taxonomy of lower-level indicators.

Cultural system

The cultural system consists of patterns of behavior transmitted by symbols, the traditional ideas and attached values that are considered interdependent within the given territoriality and systems of knowledge including technology. The cultural system is considered to be a very important component of the community ecosystem and is noted as a component in the model. Technology may be considered as one important subsystem of the cultural system that must be monitored because of the impact it will have on areas of social life.

Interrelationship of community ecosystem elements

These four elements then, make up or compose what we have termed the community ecosystem. The elements in the community ecosystem interact and are interrelated in much the same manner as are the elements in the ecological complex. Figure 2 includes the four elements, with hypothesized interrelationships. A basic assumption is that the ecosystem's purpose is to benefit the humans in that system.

The environment is taken as a given in the ecosystem. By itself, unaffected by humans, it experiences little change. By placing a population within the environment, however, the ecosystem begins to experience loss of resources and basic alterations as man begins to adapt to his surroundings. As man competes for resources, he soon learns that, by organization, he can more effectively utilize both human and physical resources in a process of

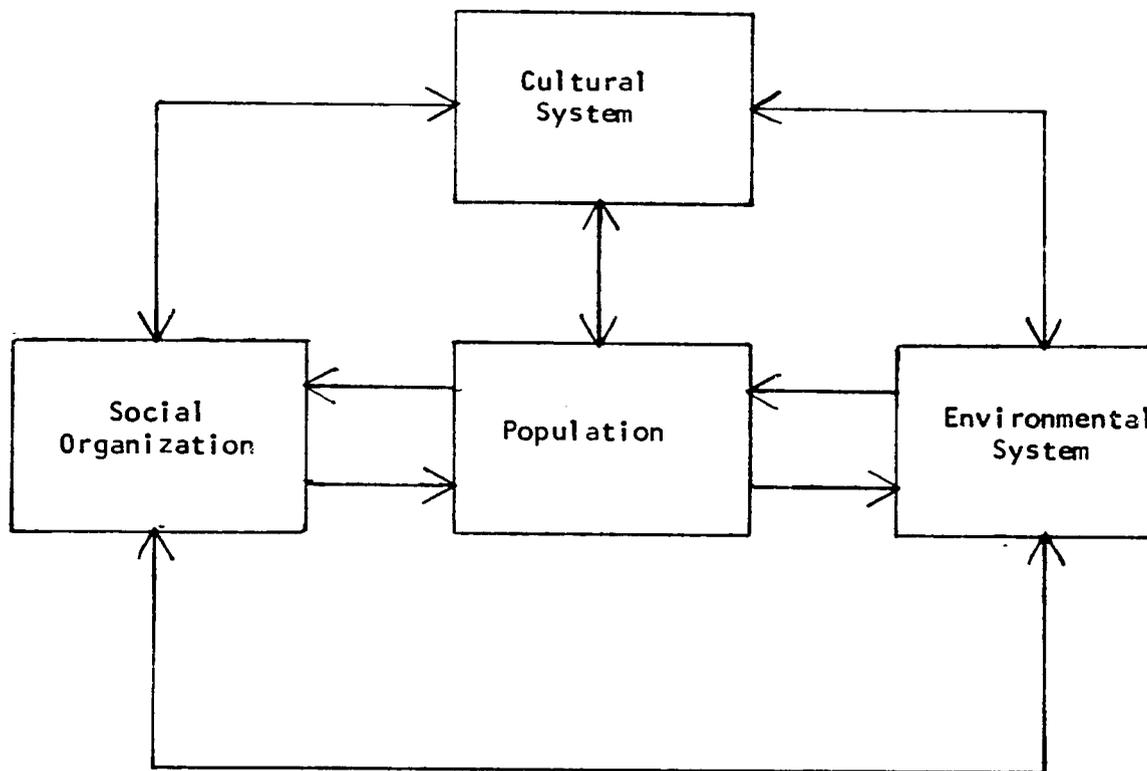


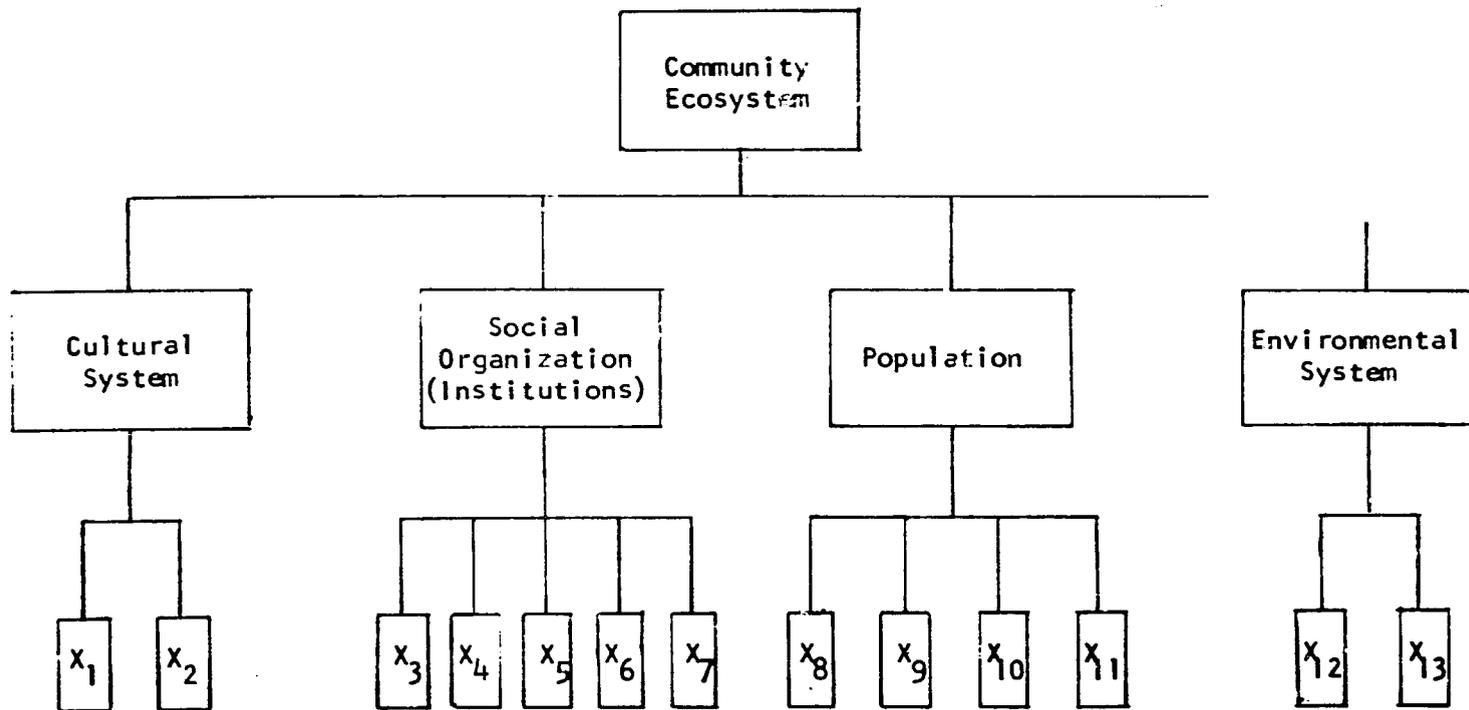
Figure 2. Interrelations between the elements of the community ecosystem

adaptation to new situations. As social organization takes place, the environment becomes increasingly artificial, resulting in new social organization. This interaction between social organization, population and the environment takes place within the cultural system.

Social organization is also considered to be the mobilization of both human and physical resources for the delivery of services to the population within the community ecosystem. Therefore, one major interest might be in the impact of these services on that population. Vital questions might be: What services are available? Who has access to them? How are they being utilized? What are the effects of a changing environment on the population? To assess these questions will require a multidimensional profile of the individuals within the system. In other words, delineating a taxonomy of these four major elements might allow us to begin to make inferences regarding the various dimensions of quality of life and, at the same time, to develop measures for those dimensions.

The discussion of social organization as the mobilizing of resources could also be viewed as the input to the community, with the impact on the individuals within the system as the output. In other words, it may be possible to assess the net costs and benefits of the services and current social conditions to the individuals within the system.

Each of the four elements of the community ecosystem in Figure 2 could be explicated to lower-level indicators, which would allow the assessment of current social conditions within the community. In Figure 3, the four elements are again presented; however, each is explicated initially to one lower level of subindicators.



X_1 = Values, X_2 = Knowledge, X_3 = Religion, X_4 = Polity, X_5 = Family, X_6 = Economy, X_7 = Education,
 X_8 = Institutional and Social Patterns, X_9 = Physical Environmental Characteristics, X_{10} = Or-
 ganic Characteristics, X_{11} = Cultural Esthetics, X_{12} = Social, X_{13} = Physical.

Figure 3. General taxonomy of the community ecosystem

This sub-grouping is not obvious - needs explanation esp. elements under pop.

These are only some very general categories and are not necessarily comprehensive of all the subelements that may need to be included. In Figure 3 the cultural system contains the total symbolic system, of which two important subsystems of values, beliefs and ideologies included in the X_1 category and knowledge of which technology would be an important part included in the X_2 category. Social organization emphasizes an institutional approach to society and contains, at a minimum, the subelements polity, family, economic, religion and education. The element of population is explicated to four subelements of institutional and social patterns, physical environmental characteristics, organic characteristics and cultural esthetics. The environmental system is explicated to two subelements of social and physical and also is viewed as a major influence on other community-ecosystem components.

A complete explication of the subelements included in Figure 3 would indeed be a major task. This is not the objective of this paper, nor will it be claimed that the subelements that are explicated will, in fact, be complete. We have, however, attempted to continue this basic explication and present, in the Appendix, a more extensive discussion of one part of the model--population, along with supporting figures to demonstrate possible initial lower-level explications.

Methodological Next Steps

Our objectives in this paper have been to suggest a perspective and definition of indicators, as well as a strategy for their development. The perspective thus far views social indicators as components in an ecological

system, and we have dealt primarily with a general discussion of the community ecosystem. Before indicators can be developed, however, considerable investment must be made in research to determine how well this general model will allow the explication of social indicators that reflect the actual life conditions of persons living in a community. For this to be realized will require considerable efforts by all social scientists. To outline a more complete strategy of social indicators, it is necessary to consider additional steps to be utilized in the development of this general model.

What we are proposing is a 4- to 5-year plan of study designed to utilize this taxonomy in the process of inductive model building. The first year would be primarily devoted to a continuation of the explication of the taxonomy. The various components of the ecosystem model will be explicated to a quantifiable level, with the needed epistemic links between the various levels of the taxonomy. Before this taxonomy can be effective in measuring the life conditions of individuals in the community or the performance of that community, it will be necessary to obtain a complete enumeration of the important properties of that system at the empirical level. We do not believe that focusing on current quality of life or social problems in the development of social indicators can provide the information system needed for effective policy decisions because what is important to us today may not be of crucial concern in the future. Because these are potentially invisible problems, we believe the ecosystem approach has merit for it allows us to explicate a wider range of conditions related to the society, individual, culture and environment than would be possible in research efforts focusing

on immediate normative concerns. We also believe that any meaningful measure of life conditions should reflect, in part, the perception of people living in a community; therefore, part of this first year's activity will include a field reconnaissance in which we will engage in extensive interviews with influentials, leaders and members of the community to gain an understanding of their perceptions of the community.

The second year of our plan of study will be engaged in the refinement of our taxonomy and the operationalization and development of measures of the low-level concepts. The refinement of the taxonomy will be done largely on the basis of our field reconnaissance wherein we will attempt to include the perception of the members of the community that we study.

To develop measures for our lower-level concepts, we propose to utilize existing techniques as much as possible, to make revisions in these measures where necessary and to develop new measures where none exist now. By focusing our study on existing measurement techniques, we believe that, in many instances, there will be existing data sources and data-collection procedures that can be utilized in this type of monitoring system. Our objective will be to suggest refinement in existing data-collection procedures and to suggest new procedures only where necessary.

At the end of the second year and the beginning of the third year, our plan is to attempt a field survey, primarily aimed at testing the validity and reliability of our measures, and to collect pilot data that can be utilized in the initial attempts to build inductively a systems model. The remainder of the third year will be devoted to a refinement of the taxonomy and measurement techniques where necessary and beginning the data analysis.

The data analysis during the third, fourth and fifth years will be largely aimed at an attempt to develop time series through replication studies, to utilize existing statistical techniques for combining lower-level indicators to provide higher-level indicators of greater theoretical value, and to develop controlled indicators wherever possible. And through the use of computer simulation we will attempt to establish interrelationships between a wide range of variables that will allow the development of models to assess social change.

Quite obviously this is an approach that will require the expenditure of considerable investments of time and energy before an information system can be developed that will allow better assessment of quality of life and current life conditions. We recognize this is a very ambitious undertaking, but also believe that, if social indicators are to be useful for policy decisions, we must make this investment and approach the task in a scientific manner.

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APPENDIX

The community ecosystem is made up of 4 basic elements, population, environment, social organization and culture. This appendix focuses on an initial explication of one of these elements of the community ecosystem-- population. This procedure is presented to demonstrate how the community ecosystem can be used in explicating lower level social indicators for future monitoring of social conditions.

Population

The term population, as used in this paper, is not concerned with human personality. Furthermore, population is not individual data. The concern with population for this research strategy is to develop social indicators to provide a quantitative profile of the social and physical characteristics of the total population of the community derived from aggregated individual data. These indicators will attempt to measure the existing social and physical conditions of that population and monitor the changes in these conditions through time. The interest in population includes the delivery of services that might be derived from other elements in this complex as well as the basic population characteristics that operate independent of those elements. The needed data must contain the total characteristics of the population and how it is altered and impacted by other elements in the complex, especially the social organizations' ability to deliver services to the individuals. Social indicators are to monitor existing conditions through time as experienced by individuals within the territoriality.

Satisfaction or statements pertaining to the quality of life of the residents in a given territoriality are assumed to be derived by inferences from the data.

Population is aggregated individual data and is expected to play a vital role in understanding how effectively community services are being delivered to the individuals in the system. Aggregated data allows generalizing to other population groups, however, to assess the performance of the community will necessitate focusing on the question of disaggregation.

By disaggregating to subgroups in the community it would appear that the monitoring and awareness of community conditions would be more complete. Again seeking to monitor individual satisfaction and quality of life entangles one in monitoring normative type statements. All that indicators can be expected to do is monitor what the conditions are. Individual satisfaction and statements about the current quality of life must come from inferences based on disaggregation. For this reason, it is important to consider Coleman's category of combined conditions discussed earlier in the paper. But, before conditions can be combined for the purpose of inference, it will be necessary to know what the current conditions are.

Indicators in the population element of the community ecosystem are measures of the social and physical characteristics that are generalized from an aggregate and are therefore aggregated data. It is recognized, however, that aggregating can tend to blur the impact of the system elements in terms of the individuals in the system. To overcome this "blurring," social indicators must be disaggregated to lower levels. Thus far, in the initial stage of this research strategy, it would seem imperative that the

Population within the community be disaggregated on the basis of age, sex, ethnicity (religion, national origin and race), place of residence in terms of geographical location, territoriality, and socio-economic conditions based on one of the common indexes of education, occupation and income. These still are basically concerned with aggregates, and it is quite possible that the operational measures developed for the subindicators in the taxonomy would reflect a more extensive disaggregation as the attempt is made to monitor change through time. It is hoped that this type of effort will allow assessment of the costs and benefits accrued to the individuals in the community system. An assessment of the population component of the community ecosystem is necessary and needed in order to understand the impact of the other components in the basic system.

Population system indicators

To understand what is meant by population, Figure 4 is presented with four major indicators of the population system. Each of these four will in turn be briefly defined to demonstrate how they are in fact different. This taxonomy is exploratory. To our knowledge such a task has never been attempted and although it is not complete, nevertheless, it will be illustrative of the next steps in this particular effort to monitor societal conditions.

Social and institutional patterns This indicator is defined as the variable patterns of individual involvement in and utilization of the processes and services of the institutional organization and facilities of the community. It is therefore concerned with the degree to which those

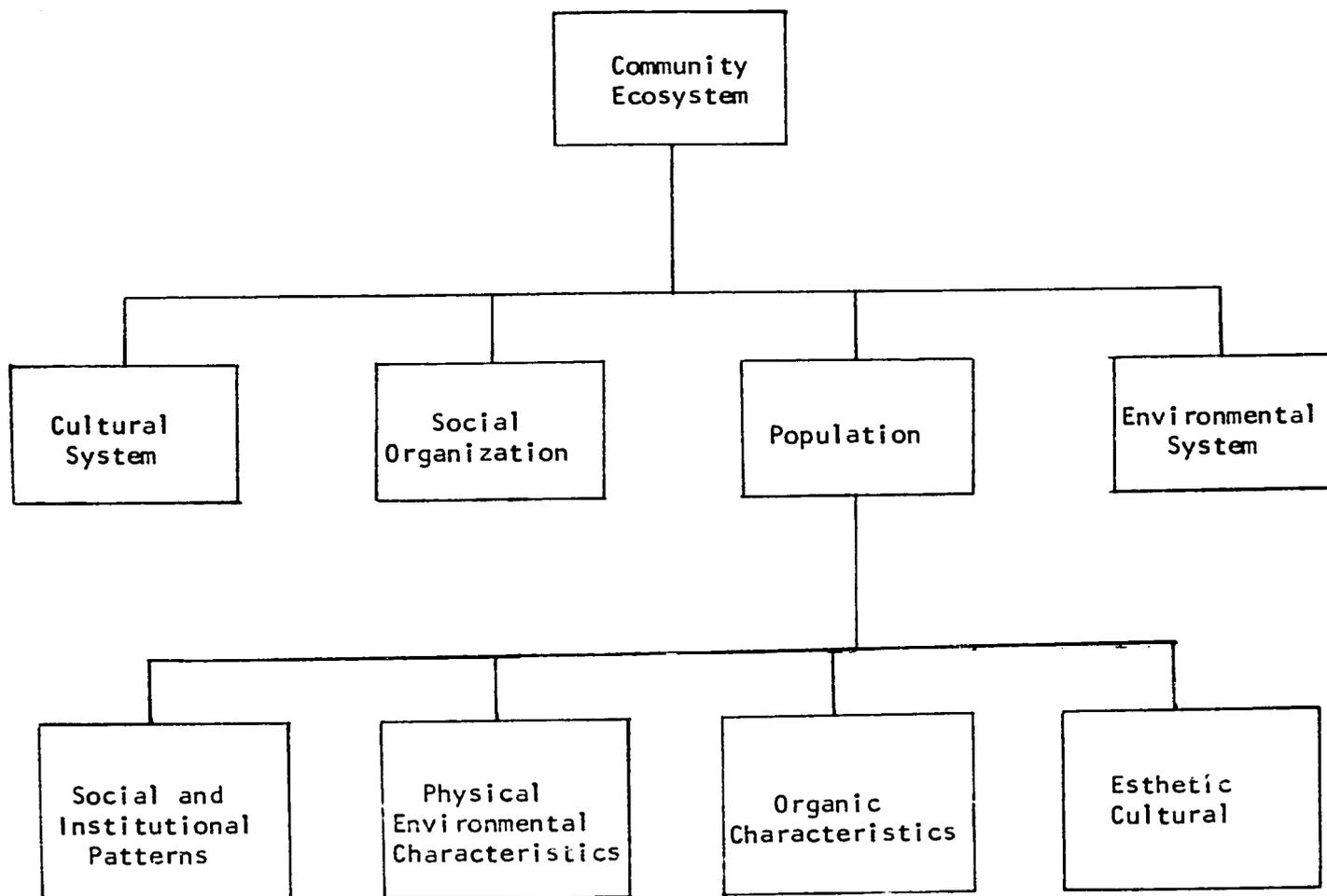


Figure 4. Initial taxonomy of the population component in the community ecosystem

services are in fact delivered rather than establishing their existence-- the latter would be the task of the social organization operationalization.

Physical environmental characteristics This indicator of the population system is concerned with the physical and environmental conditions in which the population lives and how these conditions change through time. These, like all other characteristics, will be impacted and have costs and benefits accrued to individuals through the delivery of services. The interest is in the current state of the individual's conditions resulting from the environment in which he lives.

Organic characteristics This indicator is defined as the variable patterns of individual processes and services utilized to maintain the physical organic conditions of individuals in the community. Two important organic conditions are health and nutrition.

Esthetic/cultural system The interest in this system is not in the usual scientific sense of culture. Rather, this indicator of the population system is concerned with the esthetic cultural conditions of the population. Of interest in this system might be the impact of fine arts, leisure and recreation and areas of entertainment on the individuals in the community system that contribute to a more complete understanding of the individual's "well-being" in this area. It is therefore defined as the variable patterns of individual involvement in, and utilization of the cultural and esthetic processes of the community.

The development of a taxonomy of these four subindicators of the element population is indeed a laborious task. Only the next lower level of indicators will be presented for these four subindicators of population.

A complete taxonomy of social indicators would require the enumeration, not only of these components, but also the explication of the elements of social organization, culture and environment.

Social and Institutional Patterns

Figure 5 presents the initial explication of this subindicator. There are probably other subindicators of this category that are not included in Figure 5; however, these five are, at least in part, assumed to be the minimum to be considered in further explications. Each of the five can be logically explicated into at least four to six additional sublevels and probably more before the indicators are at a low enough level of abstraction to develop measurements.

One of the basic problems encountered in developing a taxonomy is the decision as to which subconcept belongs in which category. Ideally, one should use as mutually exclusive categories as possible, but, it is difficult to attain this level of expertise in a discipline that has multidimensional concepts and extensive mutual causality among variables.

Polity

Polity is the subindicator of the "social and institutional patterns" selected for further explication and is broadly defined as the services one would assume to be delivered by the community and what benefits they are for the individuals. The major interest is in the costs and benefits to individuals in reference to these services, are they available and do all members of the community participate in them on an equal basis?

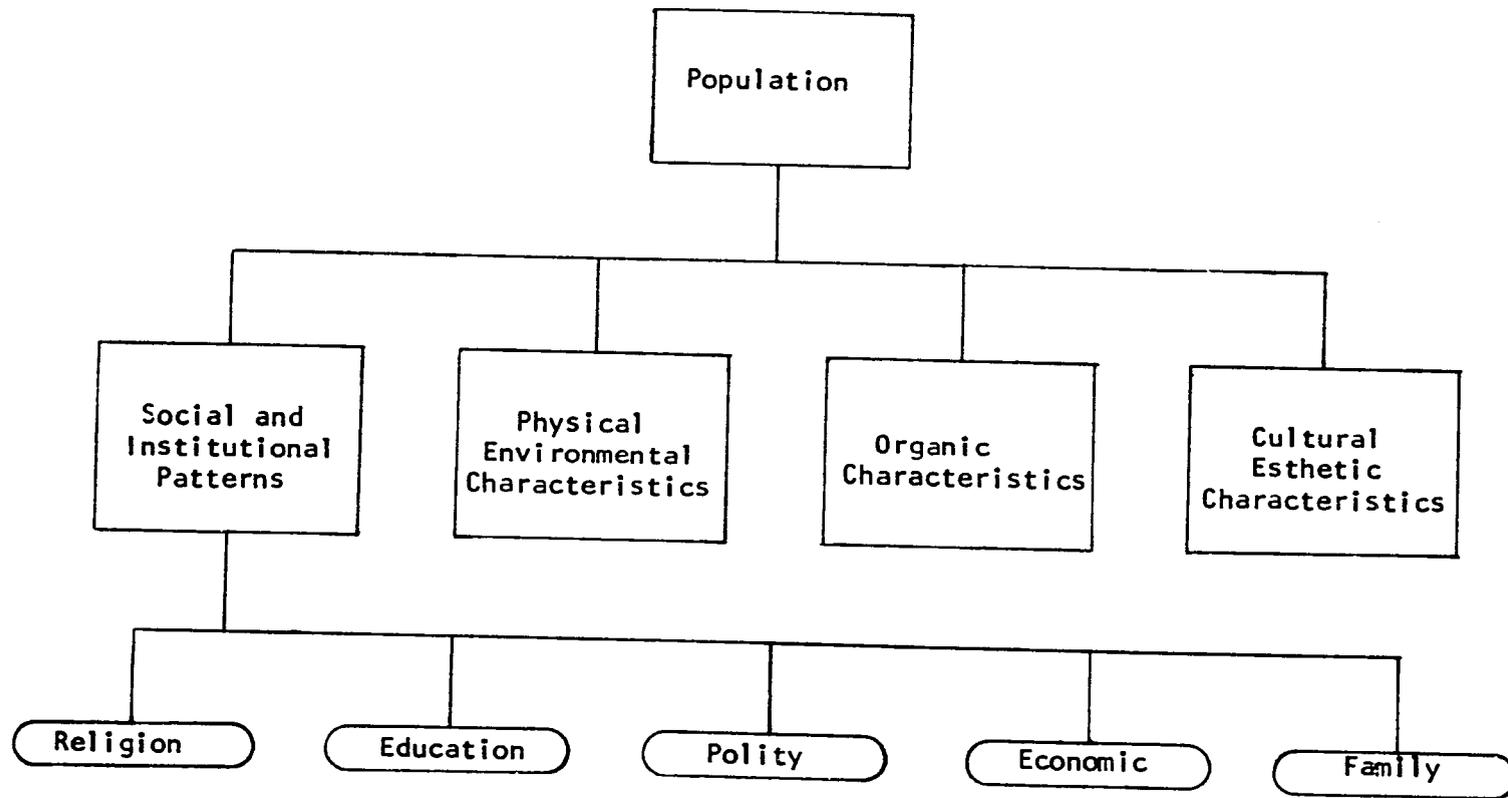


Figure 5. Explicating the element of social and institutional patterns

It is possible to demonstrate how this component could be partly explicated to lower level indicators. Figure 6 is one possible delineation of this indicator. The five subcategories are social order, public maintenance, social welfare, political participation and political socialization. Social order is defined as the maintenance of safety or securing the community residents from threat of danger, harm or loss. Further explication might include public safety and public justice. Public maintenance is defined as those activities carried out by the government to maintain or improve the physical well-being of the community. Social welfare is defined as the organized efforts by a community for the social betterment or general improvement in the welfare of its members. Measures of social welfare should reflect the manner in which various subgroups have access to and utilize the social welfare services. Political participation is defined as those voluntary activities by which the members of a society share in the selection of officials and, directly or indirectly in the formation of public policy. The concern might be with voting behavior which would include who is registered to vote and who actually votes. Political socialization is often defined as a process whereby individuals incorporate into their own attitudinal structure politically relevant behavior patterns of their respective social groups and society. A next step for the development of a taxonomy of polity would suggest developing lower level indicators for the five elements in Figure 6.

What may exist in one community may not exist in another. There may be deprivation in a community because a particular service is not provided

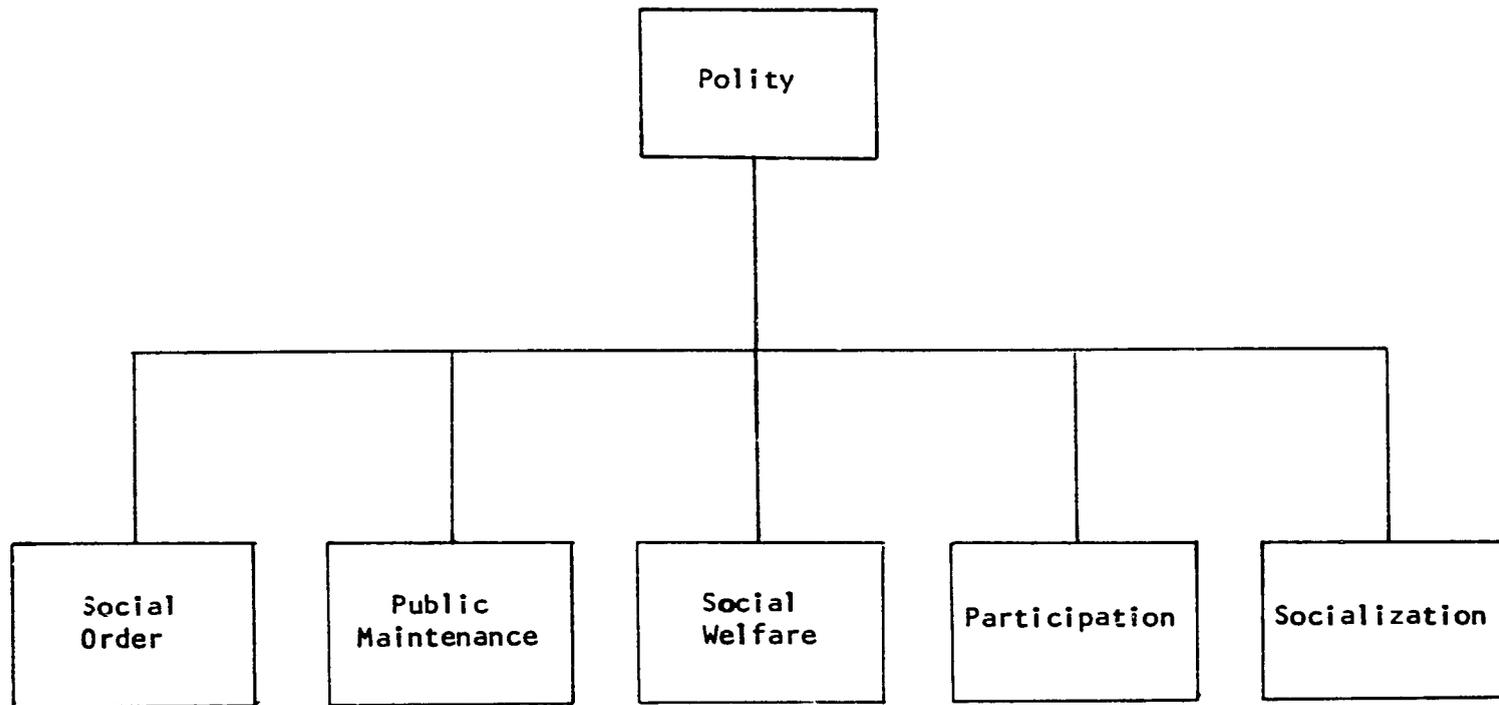


Figure 6. Initial taxonomy of polity

by the polity and the individuals therefore must seek a desired benefit from another community. It is also assumed that some services are delivered unequally. Therefore, a major part, not only of the polity, but also of the entire explication must be considered in terms of intercommunity and intra-community comparison of subaggregates of the population.

Physical Environmental Characteristics

This element of the population system has, as a basic concern, the present state of the individual's well-being in reference to his physical environment. Figure 7 is the initial explication of this indicator, which is composed of three subindicators. The individual is the unit of basic concern in this explication. His physical environment is, however, enhanced or detracted depending on the adequacy of his immediate surroundings, the neighborhood in which he lives and the community. The subindicator of individual is explicated to include the physical (man-made) environment and the natural environment. One subindicator of the physical environment could be housing. Transportation could also be a subelement of this subindicator. For natural environment, the concern is with the current state of the air, water and land.

In the neighborhood subindicator are included recreation facilities and the physical appearance. In recreation the concern is with the access to and use of facilities such as pools, bike trails, parks and school grounds. There are other concerns in this area; however, it is believed that these four give an indication of the type of services and resources that were mobilized in the social organization system for delivery in this system of social and institutional patterns.

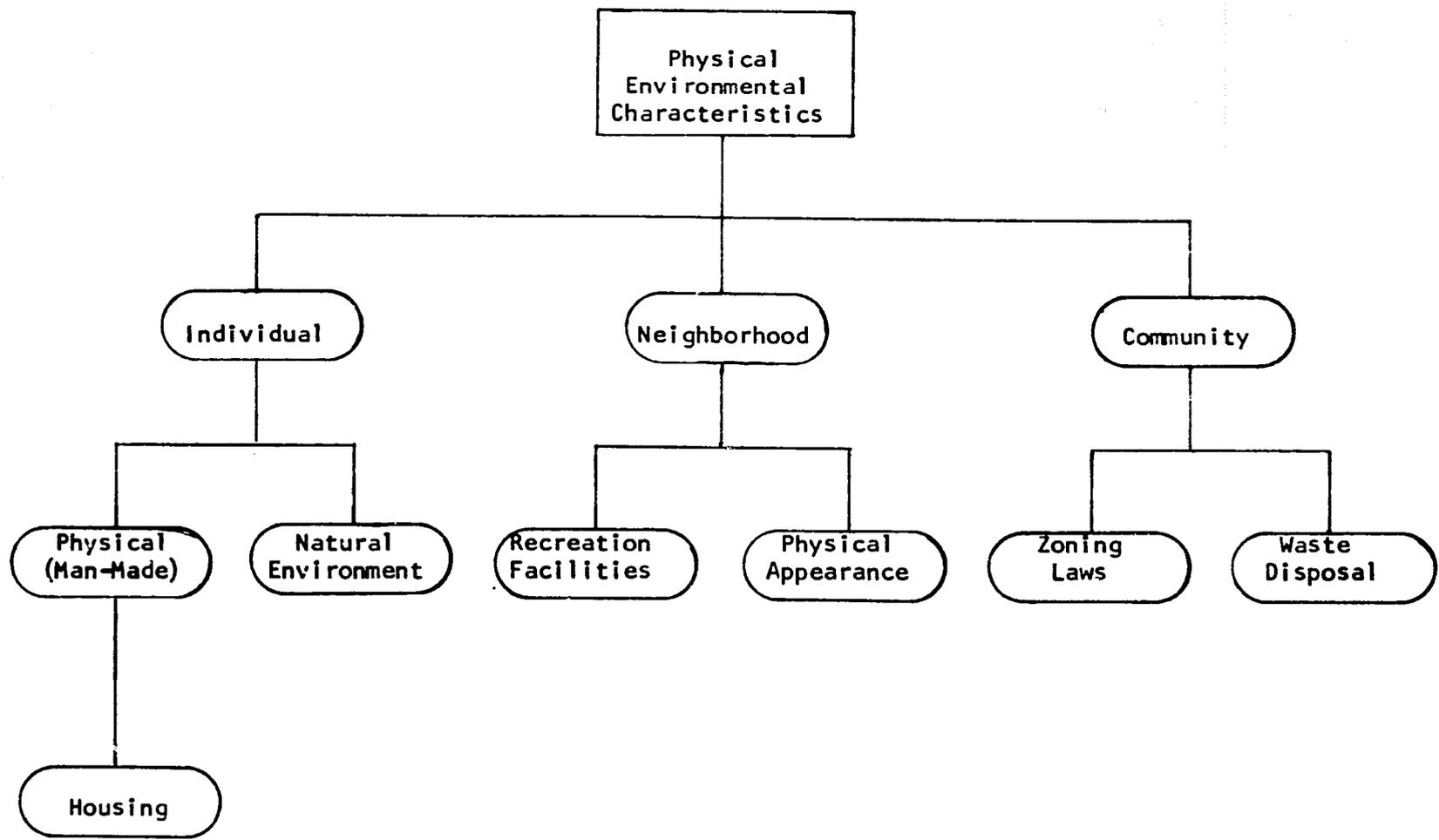


Figure 7. Initial taxonomy of the physical environmental characteristics

The last of the three subindicators of "physical environmental characteristics" is community. It could be further explicated to include zoning laws and waste disposal which are considered important in enhancing the physical environment. Important questions might be: Do the individuals in the community have access to a public dump? Do they have city pickup of solids and trash, or must they rely on some other means of disposal? What are the zoning laws and how can they contribute to enhancing the physical environment should provide direction in explicating the category of "zoning laws" to lower-level indicators for the purposes of assessing current social conditions in the community.

Organic Characteristics

The third indicator of the population system is the category of "organic characteristics" of the individuals in the community system. Figure 8 presents this indicator with three possible subindicators. Health may be considered a resource to maintain the organic well-being of the individual in the community system. Subindicators of this indicator would be concerned with access to medical services, frequency of visits to these medical facilities, types of diseases cured during past years, type of insurance carried by the individuals and assessments of the current state of mental health.

Nutrition is considered a resource utilization, and it is assumed that calorie intake, percentage of net income spent for food, regularity of meals, and type of diet may be possible measures of the nutritional state of well-being of community residents.

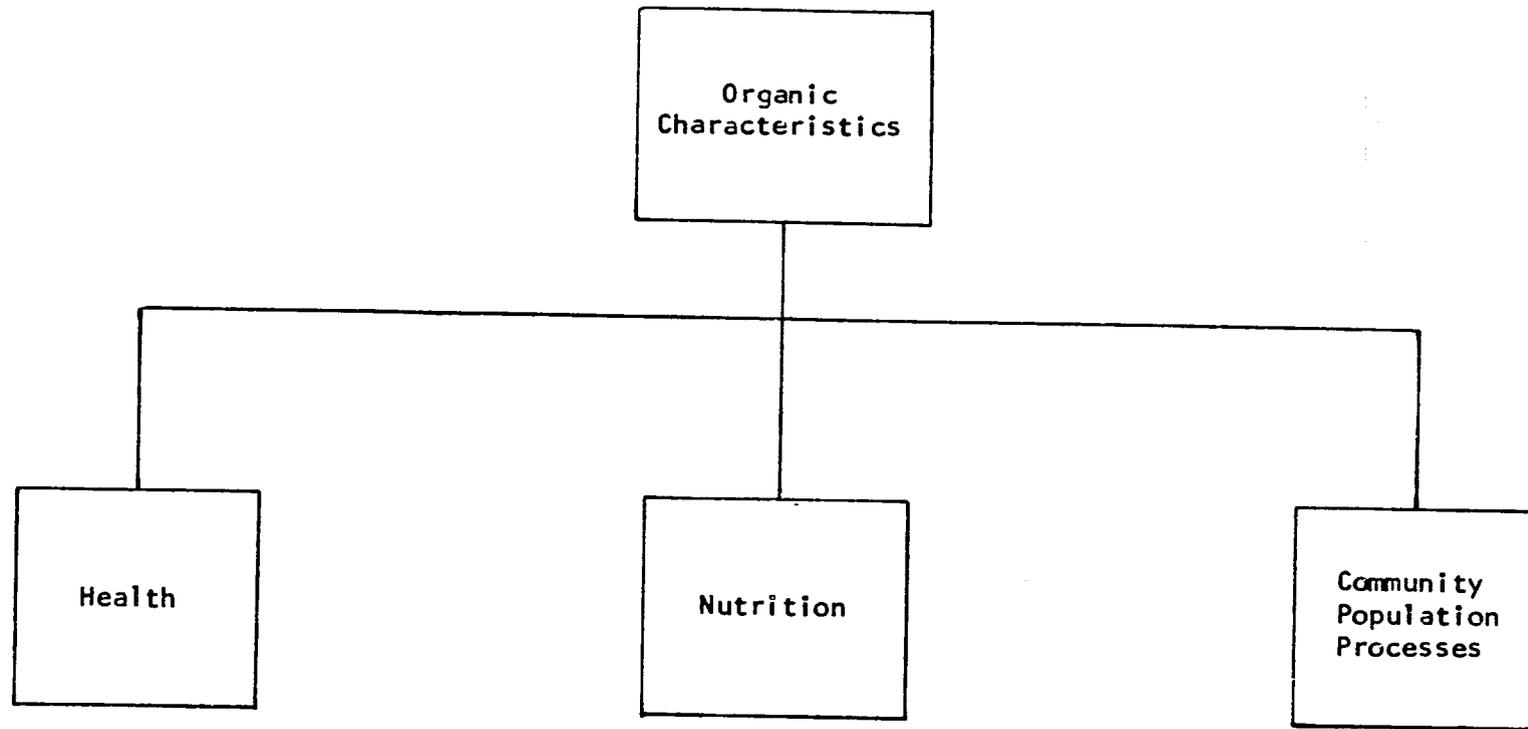


Figure 8. Initial taxonomy of the organic characteristics

The third subindicator is community population processes. In general discussions of population characteristics at least five different variables are likely to be mentioned. These variables, furthermore, are often referred to as the major population processes. Figure 9 presents these five variables with initial taxonomies for fertility, marriage and mortality. The other two processes are mobility and migration. The partial explication of community population processes is presented to demonstrate the types of data and statistics that are needed and how they are related to higher level indicators in the community ecosystem.

This terminates the partial taxonomy of social indicators. At these lower levels are where the social indicators become closer to the empirical level and more easily lend themselves to future quantification. Again, this procedure is definitely none too ordered, but does suggest a strategy for delineating components and indicators of polity in the community system.

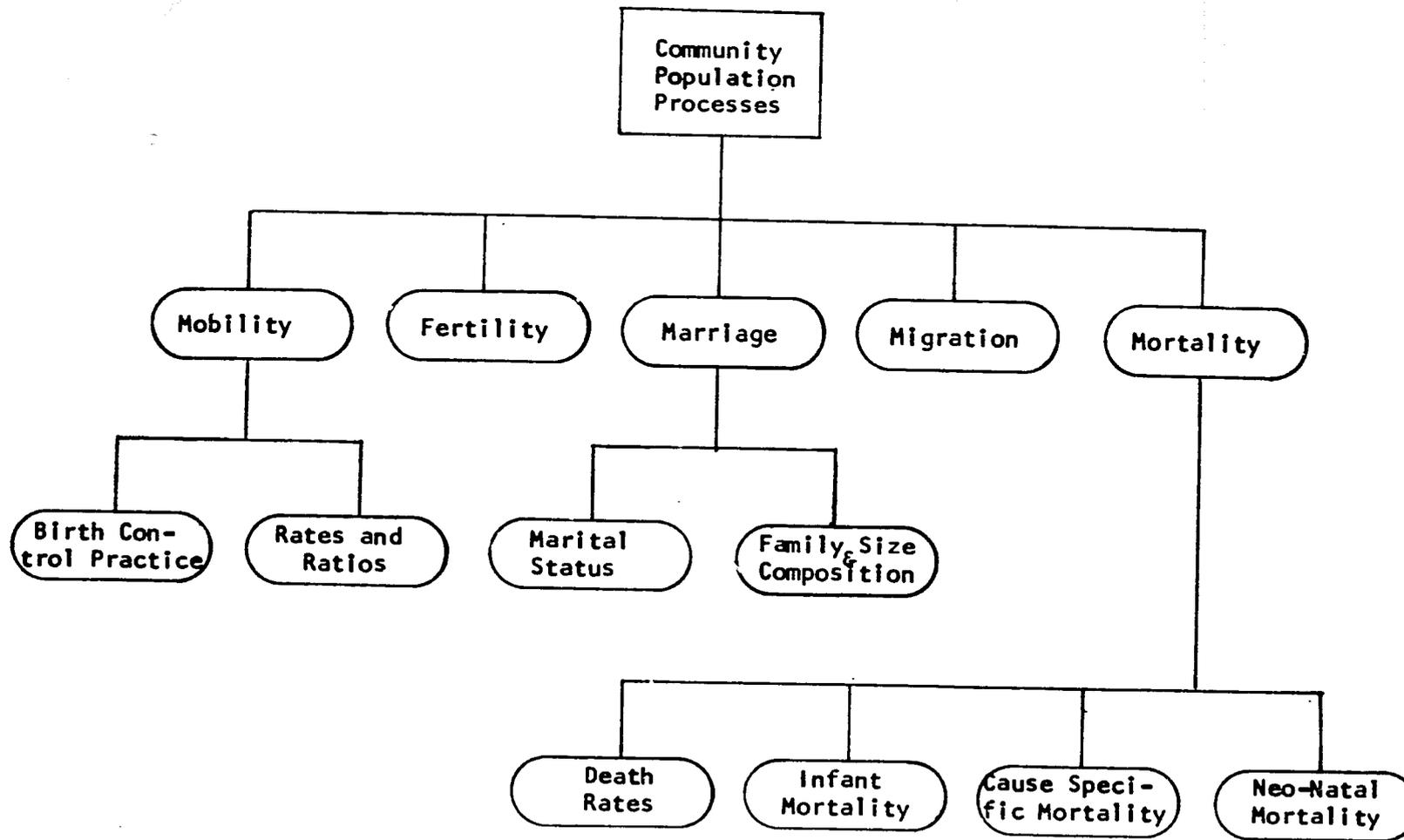


Figure 9. Initial taxonomy of the community population processes