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Methods for Analyzing Cultural Change

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A Report to the
Office of Technical Cooperation and Research
U. S. Agency for International Development

by

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Comparative Studies of Cultural Change
DEPARTMENT OF ANTHROPOLOGY
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FOREWORD

This report has been prepared and written under Contract AID-csd-296 between Cornell University and the Office of Technical Cooperation and Research of the Agency for International Development.

Allan R. Holmberg, who died on October 13, 1966, was unable to participate in the preparation of the final draft of this report.

Other reports in this series, completed or in press, include:

a. Recommendations for future research on the processes of cultural change

This report will set forth recommendations for future social research made by the Comparative Studies of Cultural Change staff. It will include general recommendations for types of social science investigation and specific suggestions for further lines of research in the world areas most familiar to Comparative Studies of Cultural Change personnel. Both basic research and applied social science projects will be analyzed. Special emphasis will be given to those projects thought most likely to increase the efficiency of allocation of United States foreign aid.

b. Report on the principles of social and cultural change

This report will treat of individual physiological and psychological processes involved in cultural transfer and their relation to biological drives. It will discuss stages of the cultural change process as it affects individuals, and it will analyze social processes of cultural transfer in the light of contact situations, antecedent characteristics of donors and recipients, demographic trends, and social structures. It will also treat of various techniques for cultural transfer, analyzing temporal and technological dimensions of the process.

c. Report on strategic intervention in the cultural change process

This report will deal with the problems relative to planned change. Examples will be given of programs in which innovations were attempted in formal educational systems, in the health and medical field, in agriculture projects, in local civic mechanisms, and in small industrial complexes, as these have an impact on the developmental process. Cross-cultural comparisons will be drawn to the extent available data permit.

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INTRODUCTION

The members of the faculty of the Department of Anthropology at Cornell University who were most interested in the study of cultural change processes agreed in 1963 to undertake a rather large-scale analysis of data for the Office of Technical Cooperation and Research of the United States Agency for International Development. That effort represented a continuation of the Comparative Studies of Culture Change launched in the Department of Sociology and Anthropology at Cornell shortly after World War II. Numerous substantive research reports have been published as a result of this long-range program. The present monograph constitutes one in a series of general summaries prepared by the project staff under the 1963 agreement. It deals primarily with methodological problems involved in studying the processes of cultural change, and techniques for promoting it. The reader will find that the monograph contains a brief review of a variety of approaches used to study change but that it focuses on the particular methods of analysis found most successful. Methodological questions raised in the analysis of change in terms of value categories are dealt with in both general terms and, more specifically, with detailed illustrations drawn from Cornell Peru Project experience in Vicos. Problems encountered in analyzing comparative rates of change are also discussed to some extent, although we (Dobyns, Holmberg, Opler and Sharp 1967: 127-133) have already presented one discussion of this matter.

The present monograph results, in other words, from agreement between officials of the research office of the Agency for International Development and the Cornell University anthropologists involved that truly sound anthropological theory is bound to have practical applications. This view of the relationship between anthropological theory and administrative practice was expressed long ago by the late Bronislaw Malinowski (1945:151). It was adhered to by the late Allan R. Holmberg (1958:12) in formulating and conducting the Cornell Peru Project. The other authors of the present monograph share this view, as well as the belief that the anthropological study of practical problems does not constitute a diversion from "pure" science but a stimulus toward building empirically based theory (Goodenough 1962:176).

The Comparative Studies of Cultural Change program has been consistently oriented to take advantage of the mutual interaction between theory and practical affairs.

Its staff has felt that the field researcher who maintains an awareness of vital practical issues will be stimulated toward the development of significant theoretical formulations, as Goodenough (1962:176) has recently stated. The staff has concentrated on the study of the cultural change processes now underway in various parts of the world, primarily Peru, India, Thailand, the Southwestern United States, and maritime Canada. In general terms, the cultural changes now underway involve the influence of behavioral models developed in industrialized Western Europe and North America upon other societies. This means a recognition that the actions of European and North American administrators, missionaries, entrepreneurs, and other specialists affect the future of societies other than their own. A purely indigenous culture no longer exists anywhere in the world (Malinowski 1945:151) save possibly in the highlands of New Guinea, and even there European penetration occurs rapidly (Brookfield and Brown 1963:1). As a consequence, the subject matter of anthropology as viewed by the staff of the Comparative Studies of Cultural Change is the change process itself. We agree with Pearsall (1961:212) that anthropologists have carried out more studies of "receiving" cultures than have analyzed the relationships existing between participants in two social systems in contact. We have attempted to remedy this bias in our own efforts. Curiosities and antiquarianisms, as Malinowski (1945:151) termed them, are no longer significant matters for anthropological inquiry, at least in the terms of reference of this monograph. Land tenure systems (Sasaki and Adair 1952; Holmberg 1959; Vázquez 1961) and labor utilization (Spicer 1952; Useem 1952a) are significant topics for contemporary anthropological study, as are political institutions (Useem 1952b; Swartz, Turner & Tuden 1966) and emerging economic institutions (Lantis 1952; Dobyns 1952) and health services (Pearsall 1961). Thus, the "third culture" of those individuals of many nationalities and institutional affiliations who work at the intersections of societies becomes a matter for study. For these people share a complex of learned behavior patterns created at this cultural intersection (Useem, Useem & Donoghue 1963:169) even if they did have to acquire them as adults.

The synthesis presented in this monograph results from recognition by the "intelligent administrator" in the Agency for International Development that a "full and disinterested knowledge of the facts is part of his duty, as well as an efficient help in his work" (Malinowski 1945:151). Probably the interest of the Agency stems also from the difficulties its technical staff has encountered in changing the culture of numerous countries (Schaedel 1964:190). This practical interest typically moves an administrator to pose to the anthropologist questions concerning specific cultural contexts which can be answered

only on the basis of field research (Goodenough 1962:173). This is not the only level of expertness of all anthropologists, nor the only level at which they can respond to policy questions. In this monograph, we are attempting to reach out toward a generalized methodology of analysis of cultural change divorced from any specific culture.

As science progressively invades more and more areas of practical importance, rough and ready methods of decision-making become steadily less and less appropriate. A "clear and systematic study of the issues" demands the cooperation of the practical man and the anthropologist, however vested interests may resist the application of social science findings (Malinowski 1945:153). The methods of analysis outlined in this monograph were developed by anthropologists based at universities, rather than working in culture change agencies which might limit their freedom to criticize established policy (Schaedel 1964:190). This structural factor bears mentioning since many anthropologists think that bureaucratic models hinder them from achieving scientific goals, while professional independence is maximized in the university (Parsons 1964:94).

Anthropology as expressed in the present monograph regards human behavior from an instrumental point of view. It looks at organized human activities in terms of their degree of satisfaction of human needs (Malinowski 1945:152). Thus, anthropology can provide at least some scientific resources to apply to cultural processes involved in international problems (Goodenough 1962:172) which officials of the Agency for International Development are called upon to attempt to solve. This monograph has been written to further the mutually profitable dialogue between anthropologists as methodologists and other professional problem-solvers.

In an earlier discussion of the analysis of cultural change, we (Holmberg, Dobyns and Vázquez 1960, 1961) dealt with alternative fundamental assumptions. Certainly the concept of fundamental assumptions leading through various levels of sentiment and attitudes to action is important for the analysis of cultural change. Yet it is only one kind of analysis, and a relatively difficult one. For such analysis depends upon much inference from direct observation and interviewing to achieve a productive examination of the fundamental assumptions of a given social system. The few serious attempts to formulate such fundamental assumptions attest to this difficulty (Benedict 1934; Opler 1945) and the direct use for analyzing change has been even rarer than a static usage (Holmberg 1960).

The social scientist, and even more the administrator in government or a businessman who is not trained in social science theory or analysis, needs other methodological equipment than the concept of fundamental assumption for the successful analysis of cultural change. A fundamental assumption is a broad cultural variable, and its analysis contributes to understanding "underlying cultural conditions and trends." What we are here concerned with, however, is "the analysis of programs and strategies designed to alter these conditions" (Pearsall 1961:212). We are concerned not so much with the fundamental assumptions behind U. S. foreign aid efforts, for example, as with formulating an analytical model for evaluating the institutions through which such aid flows.

In the present discussion, therefore, we shall undertake to outline a general model for the analysis of cultural change, emphasizing the concepts of value category and institution as the major analytical constructs. Our description of the analytical use of these constructs will require us to summarize, at least in part, some related concepts of social change which have been worked out by anthropologists. The models we summarize allow for holistic and particularistic analysis of the change process.

I. AN INSTITUTIONAL MODEL FOR ANALYZING CULTURAL CHANGE

Perhaps the most powerful available anthropological model for the analysis of cultural change is the institutional chart that was being developed by the late Bronislaw Malinowski (1945:viii-xiv) at the time of his death. We shall summarize the main features of his analytical model, changing the terminology he employed. We make some terminological alterations in order to point out how widely applicable his analytical model actually was and in order to escape the particular situational limitations inherent in the illustrations Malinowski used in order to think through the model as far as he had worked it out. We feel that our modifications indicate the thrust of Malinowski's own reasoning, whatever the limitations of his particular examples.

The Malinowskian scheme of analysis focuses upon "those processes and activities" in which persons reared in two different cultural traditions "meet, cooperate, and influence each other directly" (Malinowski 1945:73). In its simplest form, Malinowski's (1945:11-12, 26) analytical model consisted of a two-dimensional chart containing three vertical columns. The analyst enters data concerning contact institutions in the center column. He places information about the initiator society in the left-hand column and data about the receptor society in the right hand column. These terms are ours; Malinowski himself referred to the three types as "predominantly European, genuinely African," and the change process:

Chart 1. MALINOWSKIAN THREE COLUMN CHART

A	B	C
European	Contact	African

This relatively simple analytical model can be readily adapted to the analysis of distinctive features of specific culture contact situations. Thus Pearsall (1961:212-213) has proposed essentially the same type of model for analyzing relationships between health service personnel and local citizens. She adjusted her analytical model to the specific task by including five orders of data to enter in the two outside columns of her diagram: cultural, social, psychological, physiological, and physical:

Chart 2. PEARSALLIAN THREE COLUMN ANALYTICAL CHART

System 1

System 2

Cultural	←----- -----→	Cultural
Social	←----- -----→	Social
Psychological	←----- -----→	Psychological
Physiological	←----- -----→	Physiological
Physical	←----- -----→	Physical

The central column Pearsall (1961:213) conceived as representing features "shared through convergence," or being present in a single situation, or belonging to the other systems to which members of the health services system also belong. She viewed the two systems or subsystems as touching or overlapping.

Here we return to the Malinowskian view that the central column represents not an area of mechanical mixture of cultural traits, but an essentially new order of institutional reality. When two national systems come into contact, a binational "third culture" arises which transcends the two in contact. It appears to be more than a fusion or accommodation of the two juxtaposed cultures. The individuals at the cultural intersection mediate between the two

systems in contact. They develop new personalities, an in-group ethos, behavioral standards, norms of work, and reciprocity codes through communications networks and institutional arrangements (Useem, Useem and Donoghue 1963: 170).

The two charts reproduced above replicate in two dimensions a cardinal characteristic of the social organization of contact situations. Two previously independent social systems, when their members come into enduring contact, give rise to a new social system at the points of intersection.

The social behaviors exhibited by participants in the new social system of contact stem from the cultural backgrounds of the participants drawn from the two social systems in contact, as well as from the demands of the contact situation itself. Thus, numerous cultural influences affect the contact social system, and these are not so easily represented in two dimensional forms. In an attempt to deal analytically with these cultural influences, Malinowski added columns to his chart to take into account the temporally antecedent cultural conditioning that representatives of each group bring to the activities and processes of influence and cooperation. This model calls for schematic or tabular analysis under the following headings:

Chart 3. MALINOWSKIAN CHART FOR ANALYZING CULTURAL CONTACT AND CHANGE

Initiator (Value) Antecedents	Initiator Policy	Contact	Recipient Policy	Recipient (Value) Antecedents	New Forces of Spontan- eous Rein- tegration or Reaction

Axioms of Analysis

The analytical use of the chart reproduced immediately above is governed by a number of principles of an axiomatic nature that we summarize here.

1.0. A "principle of autonomous determinism" operates in each of the three social systems involved in the contact situation: a) the initiator social system, b) the receptor social system, and c) the contact social system created by the interaction of the two previously independent systems.

2.0. At the same time, it is axiomatic that once two previously independent social systems come into contact, all three systems (initiator, receptor, and contact) become interdependently related to one another.

3.0. The somewhat asymmetrical nature of the chart, with a sixth column for new forces of spontaneous reaction or reintegration in the receptor social system, implies a third axiom regarding the cultural change process. This is the principle of "dynamic asymmetry" in the initiator and receptor social systems (Malinowski 1945:74). This dynamic asymmetry disappears from Pearsall's (1961:213) very similar three-column chart. She employs very neutral labels for her flanker columns, simply systems one and two. The accumulated evidence in studies of cultural change shows rather conclusively, we think, that one social system typically initiates more change than another when joined in a contact situation. This asymmetry has been greatest, perhaps, in colonial governments contrasting European and non-European peoples and their respective institutions. It is a basic feature of culture contact of nearly all types. In few contact situations does asymmetry not exist, such as the reportedly symmetrical contacts across the Kansu-Tibetan border occurring at one period in the past (Ekvall 1939). These exceptional cases are so few in number that they may be disregarded for purposes of the present discussion. In the modern world, pronounced technological differences between populations inexorably make for asymmetrical contact relations. Yet, one of the basic ideas of the emergent "third culture" is that relations between members of two societies in contact should be coordinate. This ideal holds whatever the reality (Useem, Useem and Donoghue 1963: 171) may be, making necessary much effort to reconcile reality with this ideal. Analytically, the anthropologist needs to take both into account.

4.0. Those social systems most often cast in the role of initiators have developed a high degree of complexity. It is, therefore, axiomatic that initiator social systems display a multiplicity and even divergence in "policies,

ideas, aims, and methods" (Malinowski 1945:74). The practical implications of this axiom are tremendous. The complexity of the initiator social system typically reaches such proportions that none of the participants in the contact situation charged with guiding social change can possibly control or even predict the impact of all the institutions in his society that impinge upon the receptor social system (Dobyns 1951:31).

Utilizing African data to illustrate his analytical model, Malinowski (1945:82) pointed to the diverse interest groups entering into the process of setting policy with regard to formal education. On the one hand the education department, pro-native groups, and "protagonists of uplift" make plans in terms of their respective views. On the other hand, members of white labor unions oppose educating natives, as do capitalists who prefer workers minimally open to propaganda. In a related type of education, the missionary preaching sexual morality and seeking frequent church attendance has to reckon with the example set by presumably Christian whites. In preaching a gospel of universal brotherhood, he faces the handicap of a segregated society in which that gospel is not uniformly practiced (Malinowski 1945:68-69). The missionary complaint against immoral behavior of nonmissionaries corrupting the natives has been sounded time and again during centuries of proselytization (cf. Kino 1948:I:114-115; II:37-38).

5.0. People reared in different cultural traditions come into contact as individual human beings. They inevitably do so, however, within the context of institutions. Our experience with Americans overseas prompts us to emphasize the institutional context. We have observed a marked tendency for United States citizens abroad to display distrust of existing institutions. They often express the belief that if they could only "get through" to a key individual on a personal basis, the frustrating gate closing the garden of accomplishment would magically swing open. This personification undoubtedly has strong roots in United States schooling, fiction, and general conditioning which are fairly unique in the world. Nowhere else in the world does an individual enjoy so much freedom of action as in the United States. Elsewhere, multiple social institutions are omnipresent regulators of individual behavior. Since this concept of institution is fundamental to the mode of analysis under discussion, we specify here the characteristics of an institution in the Malinowskian sense.

5.1. Institutions are first of all "systems of clearly defined activities" (Malinowski 1945:74) which contribute to the function of the institution (Malinowski 1942:75).

5.2. Institutional activities are "carried on by organized groups" (Malinowski 1945:74). Each institution has its definite personnel, in other words, organized in terms of a distribution of authority, a division of labor, and an allocation of duties and privileges (Malinowski 1942:75).

These two components correspond, it seems, to Pearsall's (1961:213) social category or "organizational forms and processes."

5.3. The members of the institution use a "material apparatus" (Malinowski 1942:75) in their activities. The Pearsall (1961:213) model specifies a physical category, or environmental setting, either natural or made by man.

5.4. Institutionalized activities aim toward satisfying "a biological, social, or spiritual need" (Malinowski 1945:74). Whereas Malinowski lumped these needs, Pearsall (1961:213) distinguished between psychological and physiological variables. She defined the latter as biological states, while the former consist of personality, fears, goals, intelligence, etc., of the individual. Analyzing New Mexico Pueblo Indian contacts with U. S. society by means of a modified version of Malinowski's chart, Hawley (1948:18-19) remarked that it presented "the psychological battle-field area."

5.5. The institutional activities are "welded into a permanent system by a charter of laws and customs" (Malinowski 1945:74). In other words, individuals organize themselves with a charter which sets their mutual aims, defines the personnel of the institution, and establishes norms of conduct (Malinowski 1942:74-75). Where Malinowski specified a charter, Pearsall (1961:213) listed "cultural" variables such as values and ideologies.

6.0. Common Factor. In terms of the psychology of contact, it is axiomatic that the existence or nonexistence of an identity of interests or what Malinowski (1945:74) called a "Common Factor" between the initiator and receptor social systems fundamentally determines change phenomena. If the common factor is present, then cooperation or compromise become possible, agreement can be reached, and joint development can occur. If a common factor is not present, conflict occurs and disintegration likely comes to pass. Pearsall (1961:215) hypothesized in like vein that "the number and kind of compatible facets when the two systems meet" govern the acceptance of innovations. Kimball (1946:8) also has emphasized the basic methodological need "to examine the system of relations from which agreement or conflict arise as two peoples impinge upon each other." We shall

have more to say about the common factor in the next chapter.

6.1. There probably exists a dimension of contact that governs intersocietal contacts in the contemporary world which lies somewhat outside the institutional frame of analysis, although it may be but a special case of a negative common factor. This dimension is power in its physical sense. At the present time, relations between the world's two superpowers, the United States of America and the Union of Soviet Socialist Republics, are not governed, it seems to us, in terms of what Malinowski had in mind as a "common factor." Neither are these relations entirely those of conflict, even though many small-scale conflicts occur. Yet these two superpowers do not and indeed dare not act entirely independently of the existence and policies of the other, simply because government leaders in both nations are aware that each possesses the physical power to inflict deadly damage upon the other. Thus, we now apparently are witnessing certain types of cultural change in the USA and the USSR arising from a new type of common factor related to the very ancient human instinct for survival.

7.0. Cultural Continuity. However great the impact of an initiator social system on a receptor social system, the latter inevitably displays a high degree of cultural continuity. This continuity results, not from social system inertia, but from system vitality. Any cultural tradition which has evolved in place over a considerable period of time develops intrinsic strength (Malinowski 1945:74). The diversity of the world's habitats into which mankind has spread has engendered an even greater diversity of technological and social adjustments to that environmental diversity which ensures a certain minimal continuity in local cultures, whatever the impact of impinging social systems perfected in other environments (Forde 1934:2-6).

7.1. Selective Initiation. Regardless of the scale of initiator social system involvement with a given receptor system, it is virtually impossible to make the entire system available for adoption. Thus, the cultural traits of the initiator system open to observation by participants in the receptor system remain inevitably limited. What becomes available in contact institutions is, moreover, typically selected either deliberately or unconsciously by representatives of the initiator social system. A group of U. S. Citizens living overseas does not reproduce any U. S. home community, being set up for other purposes and fulfilling different needs (Useem, Useem and Donoghue 1963:174). Even in the United States, federal law for long years prohibited the sale of alcoholic beverages to Indians, thus deliberately withholding a wide range of dominant group behaviors (Hawley 1948:11) from the subordinate group. In contact situations, the availability

of initiator system culture is, in other words, typically quite skewed or biased from the point of view of the ideal culture of the initiator social system's members.

7.2. Restrictive Recruitment. The contacts between participants in an initiator social system and a receptor social system are often so structured as to limit the access of the latter to economically and socially rewarding positions in contact institutions. The color bar enforced in Africa under colonial rule had two related effects. On the one hand, it pushed Africans away from positions of vantage in European industrial society. This social and political limitation forced many Africans to fall back upon tribal resources (Malinowski 1945:74) whatever their personal aspirations might originally have been. Thus, cultural change in certain directions was braked by social discrimination. The color bar may be seen as having produced this braking effect wherever it has operated in conjunction with a colonial form of administration. Certainly it has operated in United States Indian affairs to produce a large number of disaffected and disoriented Indians. Experiences with industrial society, compulsory formal secular education, and religious proselytization in many cases destroy the conventional understandings comprising the precontact culture of the receptor society without successfully replacing them with functionally equivalent conventional understandings characteristic of the initiator society. Conditioned by repeated rebuffs the Southwestern Indian has turned resentful because of cumulative frustration of his maximum efforts to gain white acceptance (Hawley 1948:34-36; 10-11). Persons inhibited from real social and economic advancement in the initiator society by a color bar are not likely to hold the same conventional understandings as those persons whose advancement is not so restricted. They tend to develop different conventional understandings. This phenomenon has profoundly influenced the behavior of the aboriginal population of Australia under Anglo-Australian rule. There aboriginals have developed what at least one investigator labeled "contraculture" (Fink 1965:423-424; Yinger 1960:629). Present intergroup relations within nations or between nations are comprehensible only in terms of the history of past relations (Kimball 1946:8).

7.3. Nationalism. In the years that have passed since Malinowski analyzed the cultural change process in Africa, the specific features of contact situations there have been fundamentally altered by the political independence of numerous African states. The growing competence of anthropology is indicated, perhaps, by the predictions of change in the colonial system made by anthropologists at the end of World War II. Malinowski (1945:74) listed nationalism as

one of the important principles of change at the tribal, regional, and continental levels. Kimball (1946:8) pointed to Indonesia, Indo-China, North Africa, Egypt, Syria, Palestine, India, Burma, Malaya, the Philippines and South Africa as areas where the colonial system faced change or conflict. He predicted that the postwar crisis in colonial areas would not end until relations with their peoples became based on a mutuality which was not a part of colonial institutions (Kimball 1946:16). With political independence, much more mutuality has come into being than existed previously.

Rules for Analysis

The analytical chart that we have reproduced above is derived from Malinowski's thinking, but is not quite identical with his chart. Malinowski (1945:73) lumped into a single column at the left-hand side of his chart "white influences, interests, and intentions." Even he was not completely satisfied with this analytical scheme, however, for his editor notes that some of Malinowski's notes suggested an additional column on the left to draw a distinction between those intentions expressed in Europe and the resulting policies modified by Europeans in Africa (Malinowski 1945:76n.2.). Malinowski was working out a model for the analysis of cultural change in Africa under colonial rule, so we should expect to have to modify his model somewhat so as to free it from overly specific components.

We utilize two columns for characterizing the initiator society. This allows us to make the important distinction between domestic policy and overseas implementation thereof, or between headquarters policy and field station application thereof. Our experience with the overseas operations of United States institutions indicates that this distinction is a vital one, and there is certainly some support in the empirical literature of the social sciences for making it. In distinguishing between his "white" column and the contact column, Malinowski himself asked whether the analysis dealt with a project or a plan as contrasted to a cooperative institution that translated a plan into action. His own incomplete formulation already hinted at the distinction we are drawing here between domestic or headquarters policy and overseas or field execution. Malinowski discussed somewhat separately what he termed "general principles of policy" and some of the "institutions transported from Europe."

Writing during World War II in the terminal phases of most of the world's colonial system, Malinowski enumerated among general policy principles significant for analyzing

cultural change:

- 1) colonial ministry policy (ranging from indirect rule to full acculturation)
 - 2) political party philosophies (such as Fascism)
 - 3) missionary policy
 - 4) economic enterprise (at least to the extent that it took for granted a supply of cheap native labor).
- Malinowski emphasized that much planning went on without regard for African existence, ignoring African needs, drive toward independence and self-expression, and economic activities.

At the same time, Malinowski stressed that the divergent self-interests of various policy-making segments of the initiator society created complexities of intentions. Missionaries were not the only representatives of the initiator society present in contact institutions, so that church attendance and observance of the moral rules of the European denominations with regard to sex, for example, were influenced not only by the missionaries, but also by secular representatives of the initiator society. In this observation, Malinowski touched upon a general characteristic of contact situations that we have already mentioned. He also verged upon the distinction between domestic policy and overseas application that we wish to emphasize, along with the distinction between headquarters policy and its application in numerous field branches of large bureaucratically organized institutions.

When Malinowski wrote about actual institutions transported from Europe to Africa and adapted to local conditions, he began to list institutions within the meaning of his own definition: 1) the homestead, 2) segregated all-European urban areas, 3) banks, 4) exchanges. He mentioned the settler, the South African labor unions with vested interests opposed to educating Africans, and the vested interests of capital in the "raw native" (Malinowski 1945:81-82).

While it is difficult to establish hard and fast roles for distinguishing between domestic policy and overseas applications, the distinction drawn by Linton (1936:299) is useful. He pointed to the difference between idealized culture -- what people tell the social scientist they do or should do -- and real behavior. Very often, it seems, one can distinguish analytically between the ideal of domestic policy and the real applications made overseas, or the ideal policy promulgated in Washington and the real applications made in fifty states.

To employ an example to which we shall return often in this discussion, there is a discernible distinction between the motto of Cornell University and the real operations of the Cornell Peru Project. The motto enunciates a general principle or ideal taken from the words of one of the university's founders, Ezra Cornell: "I would found an institution where any person can find instruction in any study." Ezra Cornell did participate in founding a moderately revolutionary institution of nondenominational higher learning in upstate New York (Becker 1943:62; Bishop 1962:190-193). It is doubtful, however, that he ever envisioned his words being rather literally applied by the staff of the Cornell Peru Project in an obscure Andean mountain manor hundreds of miles away from the Ithaca campus. The general intention of one of the university's founders was translated into a specific application reflecting changing university orientations toward research and the emerging importance of the social sciences.

The specific overseas implementation of that general domestic policy included training Indian serfs in new agricultural techniques, teaching their children a second language, making them literate, and preparing them to revolutionize traditional intergroup relations in their somewhat isolated portion of Peru.

The distinction between Ezra Cornell's purposes in helping to found Cornell University and the overseas operations of the Cornell Peru Project involves a considerable time difference. Such a time lag will often occur between the enunciation of a general domestic principle and its specific applications overseas.

At another level of analysis, a general principle followed by Cornell University was to encourage its faculty members to conduct research in their disciplines. The Cornell Peru Project broke new ground and went beyond the contemporary general domestic principle in its overseas operations. It recognized that the social scientist collecting data outside his own country has an obligation to the citizens of the country where he is conducting his research, and most specifically to those people with whom he is working most intensively. Thus, collecting data about the operation of the traditional manorial system in the Peruvian Andes seemed to the Cornell Peru Project staff to call for it to attempt to ameliorate the social iniquities inherent in the system. This required practical action as well as data collection (Holmberg and Monge 1952).

The distinction that we are drawing must be made, probably, in any large institution that operates over

significant geographic distance and therefore encounters communications network separation between segments of its personnel. The distinction between general ideals and specific policies certainly must be made whenever a single headquarters guides the activities of multiple action groups facing different local circumstances. Thus, such a distinction exists between the general policy principles enunciated by the Administrator of the Agency for International Development in Washington and the specific implementations of those general principles carried into effect in scores of country missions all over the world where many different cultural traditions must be dealt with. Good as radio and written communication between mission personnel and Washington headquarters is, the personnel of the country missions interacts, and necessarily so, with large numbers of citizens of the countries where these representatives are stationed. Thus, local social and political considerations are brought to bear upon general policies, and country-by-country variations arise.

It is interesting to note that the distinction between general ideals and specific policies or regional application has been recognized at the highest governmental level. The Indian Constitution, in part to avoid overcentralization, and in part to accommodate regional differences, contains a number of general directives which it leaves to the states to implement in their own ways.

When the personnel in the country mission is accorded a significant degree of freedom in formulating country programs to meet locally defined needs, mission programs can vary from general principles with significant latitude, as long as the principles are stated in very general terms, indeed. Headquarters personnel simply lacks sufficient time to test each and every country mission program proposal for consistency with enunciated general principles (themselves not necessarily mutually consistent one with another).

Contact

Turning now to the contact process column in the chart, we need to emphasize the institutional nature of entries in this column. The general principles of initiator society policy are reflected in fairly specific institutional organization in the contact situation. Here are those organized activities involving members of both the initiator and the receptor society.

- 1) Native schools under initiator supervision (in Malinowski's African terms, native schools under white supervision)

- 2) Organized work institutions
 - a. mines
 - b. plantations
 - c. particular transport systems such as railways
 - d. piece work arts and crafts production for a commercial market
 - e. service industries (experimental laboratories, telephone companies, hospitals, offices, surveying, etc.)
- 3) Mixed courts (typically a feature of indirect colonial rule)
- 4) Systems of indirect administration (Malinowski 1945:82; Hawley 1948:22).

In the case of the Cornell Peru Project, the institutions of contact between the Indian serfs of Vicos and Peruvian national society came to be numerous. By assuming the role of the patron of the traditional manor, the Cornell Peru Project scientific staff was able to channel serf labor resources into constructing enlarged school buildings. National Peruvian government policy answered this initiative by dispatching an increased number of teachers of better quality than the one assigned earlier, and gradually the national Ministry of Public Education built up the Mestizo or creole staff of what was in effect a native school. It recruited children past the minimal age of eligibility for school entrance who were monolingual in Quechua while the language of instruction was Spanish. Pupils were socially defined as indigenous serfs (the term "Indian" in Peru usually designates rain forest Indians still living in tribal society, rather than highland peasants and serfs), while the teachers were socially defined as either creole or Mestizo, not indigenees (Holmberg and Dobyns 1962). The formal educational system implanted in Vicos has tendered the resident population a greater number of innovations than any other single contact institution, a point to which we expect to return later in this discussion.

By assuming the role of patron of the manor, the Cornell Peru Project scientific staff was also able to utilize the organized work institution itself as a contact institution. Vicos was not a true plantation in the technical sense of the term. It was neither mechanized nor highly capitalized, nor was it successfully engaged in commercial crop production for industry. As a matter of fact, its failure to convert to economic fiber crop production led to the opportunity for the Cornell Peru Project to come into being. By extending the traditional manorial system's operations in new directions, the scientific staff of the Cornell Peru Project was able to achieve notable changes in serf agricultural practices and production (Holmberg 1952; 1953; Vázquez 1957; 1959).

In its deliberate manipulation of the traditional role of patron, the Cornell Peru Project scientific staff consciously eschewed the traditional patronal responsibility for judging cases of interpersonal and interfamily conflict among the Vicos serfs (Holmberg 1958:15). This gradually forced the serfs to resolve their own disputes or take them to the civil court system of the national government. Thus they moved away from a colonial-style informal adjudication of differences by an all-powerful father figure at the head of the manorial system to a formal judicial system with contest of interest and legal representation of competing interests.

The Cornell Peru Project itself in a sense constituted one form of indirect administration. Under the terms of its original formal charter, the personnel of the Cornell Peru Project worked itself out of that type of role during a five-year period. This did not, however, entirely terminate indirect administration of Vicos. The Peruvian national government organization created to support the local actions of the Cornell Peru Project and other Indian action agencies at the national capital level continued to operate.

The Vicos prevocational school and Rural Nuclear School organization reached full-scale operation only after the Cornell Peru Project administration terminated. These schools continue to educate Vicos children and those from neighboring populations interested in securing some formal learning. The Peruvian Indian Institute's local representatives incorporated into a Peruvian National Plan for the Integration of the Aboriginal Population in 1959 remained active at Vicos. After a top-level administrative re-organization that returned responsibility for Indian integration to the Peruvian Indian Institute in 1965, personnel has been gradually withdrawn from Vicos to man a new headquarters for an Ancash Department integration program with headquarters in the departmental capital city, Huaraz.

Even the transfer away from Vicos of most of the Mestizo and creole personnel stationed there for a decade and a half leaves it operating under indirect rule to a certain extent. For Vicos remains somewhat independent of the Peruvian system of direct administration through departmental prefects, provincial subprefects, and district governors and their staffs. It is organized as an Andean community, parallel in structure to the constitutionally recognized Indigenous Communities of Peru. The latter enjoy a limited economic and political autonomy under the national constitution and laws. They are typically governed by elected officers and councils (Lindley et al. 1963). So is Vicos,

where a corps of leaders was trained by the Cornell Peru Project, and where an elective group of executives and councilmen continues to decide community affairs.

The Cornell Peru Project also utilized its patronal role to bring additional Peruvian national institutions into the contact situation more effectively than they ever had been prior to 1951.

The Peruvian army consciously plays a significant role in national unification and cultural modification of Indian conscripts. Universal military service legislation brings a disproportionate number of illiterate Indian conscripts into the army as compared to literate Mestizos and creoles. The officer corps has long recognized its necessary mission as an advocate of cultural change, therefore, and has worked out programs designed to accelerate change. The Cornell Peru Project encouraged Vicos youths to volunteer for military service instead of avoid it, with telling long-range consequences for them and for their relatives.

The Cornell Peru Project also played a cultural broker's role in the medical field. The director founded a weekly clinic service for the Indian serfs during the first year the project operated, utilizing manorial and Project resources. By 1954, a new field director was able to obtain international aid. A UNICEF rural health team agreed to provide medical services on a weekly clinic basis. Later, the National Plan for Integrating the Aboriginal Population included a doctor or sanitarian in its local table of organization, although it has encountered real difficulty in recruiting.

The direct commitment of such national and international institutions to fostering cultural change has an important effect upon the rapidity with which change occurs. For a long time, anthropologists viewed cultural change as requiring generations. The evolving "third culture" seems to be greatly accelerating the process. Complex technical items such as transistorized radio receivers and artificial fertilizers have been widely diffused over the world since World War II (Useem, Useem & Donoghue 1963:178). The Cornell Peru Project staff greatly multiplied its own impact and accelerated the pace of cultural change in Vicos by recruiting additional "third culture" mediators in other organizations.

Recipient Policy

We have chosen the label "recipient policy" for the column next to the contact column representing the values and ideas of the recipient population adjacent to the contact institutions. This may not be the best possible title for this column. We are attempting to generalize from the overly specific description of the column Malinowski (1945:82) provided. His column was for "those phases of African life where the tradition of tribalism is the main determining factor of conduct, organization, and belief." Clearly the analyst of cultural change does not deal always with contacts between industrialized and tribal peoples. Many social scientists study cultural change resulting from contacts between industrialized and less industrialized societies which are far from tribal (Dube 1957; Dupree 1956; Fisher 1953; Foster 1958; Gould 1957; Gulick 1955; Lewis 1951; Loomis et al. 1953; Miner 1939; Patai 1947; Quint 1958; Rogers and Beal 1958; Stirling 1958; and many more). Most nations in the world must deal with problems of administering socially subordinate populations, many of them tribal in nature. International organizations and government-to-government aid programs do not, on the other hand, usually wrestle directly with tribal peoples. Yet the model for analyzing cultural change that Malinowski was working on can, we feel, be adapted to the analysis of cross-cultural contacts regardless of the factor of tribalism.

If we are to utilize the general analytical model to look at the Cornell Peru Project, as an example of contemporary analytical interest, we should not enter in this column data pertaining to tribalism. The people of Vicos have not lived in a tribal society within historic time, and probably not for centuries of prehistoric time. They have lived under a manorial system, so we should enter in this column data pertaining to serfdom.

If we are to utilize the general analytical model to look at the operations of a binational technical service, for example, we should enter in this column data pertaining to traditional cultural behaviors pertinent to the specific organization. In the case of an agricultural service or the similar Joint Commission on Rural Reconstruction in China (Wood 1962:201-205), we should enter in this column the traditional farming instructions and their practices among agriculturalists of all types that the binational service or commission staff sets out to change.

Some of Malinowski's (1945:83) tribal items still obtain with wide applicability. Speaking a different language from that of the initiator society's members of

the contact institution should be noted in this column, be it a tribal language or not. Marrying under a set of rules different from those of the contact institution should be entered in this column, be they tribal roles, or folk Catholic, or any other variant. Believing in witchcraft should be entered here, along with traditional kinship bonds, and preferring native homebrew to prestigious and ubiquitous whiskey.

Recipient (Value) Antecedents

Column number five in our analytical chart we have labeled, for lack of a better term, "Recipient Antecedents," with the word "value" inserted to indicate the order of cultural phenomena we have in mind. This column corresponds to that which Malinowski (1945:73) called the "reconstructed past." He regarded this "useful" column in the analysis of change as one essential task for the anthropologist: to reconstruct precontact conditions insofar as possible by scientific cross-checking.

Malinowski (1945:76) emphasized that the data in this column can never be obtained by observation, so that they are of quite a different order of validity from the other tabulated data that can be recorded. He felt that the anthropologist could state no more than his opinion as to what formerly existed.

As a matter of fact, Malinowski made quite explicit his opinion that reconstruction of past cultural conditions is sometimes not even possible, and that even when it is possible, the past cannot be known with precision. As a consequence, Malinowski (1945:30) considered the results of historical reconstruction to be of "second-class quality" as compared to contemporary field research. In methodological terms, he did not consider legitimate the comparison of the results of historic reconstruction with modern conditions.

In criticizing historical reconstruction, Malinowski had in mind the problems of scientific analysis of oral traditions. He exemplified his argument with the impossibility of reconstructing native culture around the Gulf of Guinea where European contact began under Prince Henry the Navigator (Malinowski 1945:29). The utter lack of written records of the past among nonliterate peoples does stringently inhibit accurate historical reconstruction of past culture.

On the other hand, the anthropologist today does not limit his research to nonliterate peoples or even to tribal

peoples. Thus, he often has available written records of past events, and very voluminous literatures in the case of long-civilized areas. The reconstruction of past cultural patterns from records that were not made by anthropologists, and which are in any case frequently quite fragmentary, often entails many of the same frustrations and inaccuracies as reconstructing the past from oral tradition. Nonetheless, an extensive written record does allow the anthropologist to reach reasonably valid reconstructions of cultural values. We emphasize, therefore, the analysis of values in this column of the analytical chart.

In subsocieties with very separatist ideologies and extremely strong boundary-maintaining mechanisms, this column may not be needed in order to achieve an accurate analysis. In any event, Hawley (1948:18) omitted it from her analysis of Pueblo Indians in New Mexico on grounds that the past of these conservative groups was so similar to their present as to make such a column superfluous. While we have reservations about the continuity of former and present Pueblo culture in social structure and technology, we certainly concur with Hawley as far as Pueblo values are concerned.

New Forces of Spontaneous Reintegration or Reaction

We have followed Malinowski (1945:73) in labeling our sixth column "New Forces of Spontaneous Reintegration or Reaction" and in separating these phenomena from those in the contact column per se. Malinowski (1945:76) envisioned this column as the place for recording African racialism, nationalism, and reinterpretations of tribal allegiances. The independence of many former colonial areas since World War II has, of course, materially changed the nature of contact situations all over the world. There may be some question whether such phenomena do not now belong in the contact column, since they are significant determinants of the nature of intersocietal contacts.

Yet it seems to us appropriate to maintain this analytical column to distinguish those reactions of recipient societies which set them apart from and continue to differentiate them from an increasingly monolithic and culturally uniform industrial society. The nativistic movement continues to be a significant phenomenon in world affairs, resulting from intersocietal contact, yet not part of the productive contact situation. The Congolese rebels of 1960 who believed that they had been rendered magically immune from rifle bullets constituted such a negative factor as to virtually sweep away the existing contact institutions.

One possible reaction to the frustrations of inter-societal contact is to retreat into the past in one way or another. Archconservatives -- and they may be either old or young in chronological terms -- uphold traditional cultural principles. They may see themselves as warding off the dangers of identity loss through cultural conquest (Hawley 1948:8). Another alternative, typical of the individual who initially tries very hard to change his behavior and finds that he cannot gain acceptance from his target reference group, is rebellion. This may be periodic as in individual revolts among Pueblo veterans of World War II (Hawley 1948:10-12) and Negro riots in major U. S. cities during the 1960's. It may also be institutionalized into militant separatist movements (Wirth 1945:361) some of which eventually win political autonomy and become the governing group, as was the case with India's Congress Party. When this occurs, the psychology of rebellion does not automatically disappear but is carried over in the minds and behavior of the former rebels charged with the responsibility of government. No one who hopes to deal successfully with officials of a newly independent nation can afford to forget for a moment this psychological reality.

II. THE COMMON MEASURE AND CHANGE EVALUATION

In outlining a model for the analysis of cultural change in the last chapter, we mentioned that Malinowski saw a "common factor" between initiator and receptor social systems as fundamentally determining change phenomena. As a matter of fact, Malinowski (1945:72) considered the "common measure" to be the crucial concept in his analytical scheme. He defined it as "the existence of certain elements of common interest, of tasks in which Africans and Europeans can cooperate in their joint interest." He regarded his chart for the analysis of contact as a tangible and formal, yet simple, scientific instrument for handling evidence which followed logically from the central concept.

This "ultimate reality" of cultural change stems from the fact that the "corresponding institutions" of two societies satisfy people's needs by utilizing the same natural and human resources, although in different ways. Malinowski (1945:71) saw the real dynamics of change in the clash of interests and greeds of members of the initiator and receptor societies, occurring in an institutional context that inhibits piecemeal change.

Where there exists a long-term identity of interests between members of the initiator and receptor societies, combined with knowledge and competence among the initiators to carry out a well-planned policy, the common factor can exist. For then sentiments and ideas and outlook of members of the two systems have sufficient basis for agreement to permit collaboration.

A "negative common factor" must also be taken into account. Such a factor may be produced by initiator seizure of land resulting in a shortage of land base among the receptor population, with resultant overstocking and over-exploitation in general leading to deterioration through erosion. Governmental restrictions on freedom of movement and utilization of public facilities also generate a negative common factor (Malinowski 1945:66). When the initiator society's local representatives feel free to exploit native labor in ways that weaken enterprise in the receptor society without paying "satisfactory remuneration" or feel impelled to seize native lands or to limit native opportunity, conflict ensues in the absence of a common factor (Malinowski 1945:70). In other words, the negative common factor appears whenever the initiators monopolize those elements essential to receptor progress, be they labor,

or land, or personal dignity, or self-confidence, or a customary law that is indispensable if marriages are to work, etc. (Malinowski 1945:72).

Very serious practical program implications flow directly from the crucial concept of the common measure or factor. Since institutions satisfying analogous needs in two cultures must utilize the same resources, they cannot be replaced piecemeal nor without sacrifice on the part of the changing population (Malinowski 1945:71). Perhaps the most clearly reported evidence for the rapidity of thoroughgoing change as opposed to attempts at piecemeal change comes from the Manus Islanders who transformed their community behavior following World War II (Mead 1956).

The concept of the common measure holds fundamental importance to anthropology as a policy science. For policy decisions can be made on fairly objective grounds once a common factor is identified by representatives of two social systems in contact. Policy formation need not be paralyzed by the doctrine of cultural relativism, however vital this may be to the anthropologist as data collector.

There is one circumstance under which that cultural relativism which values equally each and every cultural tradition known to man logically applies. This circumstance is the collection of data about societies which can be later employed in scientific comparative analysis. So far as obtaining data for analysis is concerned, data about any given cultural tradition are as a general rule just as desirable and equally valuable as data about any other cultural tradition. Collecting data about any given society becomes, therefore, approximately as legitimate an anthropological activity as collecting data about any other society.

Anthropology as a comparative science begins to encounter methodological limitations upon the principle of cultural relativism that posits one-to-one equivalence of societies the moment comparative analysis actually begins. For in order to compare cultural traditions, one must define the terms of comparison.

In the first place, one must consider the techniques of data collection and the question of comparability of data. Quantitative analysis of data from different societies necessitates the assumption or proof that there was parity in the techniques employed and the quality of data collection.

In the second place, if one is concerned with testing hypotheses about the "nature of society or culture" (Naroll

and D'Andrade 1963:1053), one immediately defines a particular sample of societies. The data about certain societies become pertinent to the analysis. Data from other societies become nonpertinent. Independently functioning societies not sharing traits acquired by diffusion from each other constitute the pertinent sample. They stand in a one-to-one analytical relationship. Societies that do share traits acquired by diffusion assume a value of less than one for purposes of such an analysis.

Keeping in mind that even the armchair analysis of cross-cultural survey techniques evaluates societies differentially, the anthropologist who ventures outside the academic halls in order to serve as a consultant in the practical affairs of community development or other forms of guided cultural change is likely to encounter promptly additional limitations upon the practice of cultural relativism.

Consider the general relativistic insistence that Hogbin (1957:255) paraphrased as everyone being ethnocentric in being convinced that his society's own way of life is the best. Perhaps this dictum is true in a very loose way. Yet the late Rev. Solomon B. Caulker, Vice Principal of Furah Bay College, Freetown, Sierra Leone, felt a "holy impatience" because "too many" of his people lived "sub-normal lives" (Gruber 1961:ix). This is a counterpoised generalization that says everybody is far from convinced that his own society's way of life is the best conceivable. Here is demand for cultural change, the common factor.

Many non-anthropologists believe that one of the outstanding facts of contemporary life is precisely the number of members of nonindustrialized, dependent or newly independent societies who are convinced that there are better ways of life than they currently enjoy. The United States and other Western nations are committed to helping "under-developed" countries acquire what Staley (1961:229) termed "democratic social technology." Under such circumstances, Staley argues that while cultural relativity must be stressed because nearly endless variations in the details of solutions to the problems of development appear possible, the more fundamental agreement upon basic principles is not debatable. This argument coincides with Northrop's (1949:426) conclusion that there is no logical necessity for distinguishing morality from scientific verification.

Even when participants in a society feel that its ways are generally the best ways, this does not mean that they will not recognize the desirability for change and even rapid change for specifically defined purposes (Mead 1956: 372; Holmberg 1960:85-86; 93-95; Holmberg and Dobyns 1962:

109). The Rev. Caulker drew a clear distinction between populations protected by scientific medicine and Sierra Leone, in the specific function of public health in terms of the goal of human survival. He demanded that science answer the witch doctor (Gruber 1961:ix) in a country where 80 percent of infants die before reaching the age of one year and people know not whether this is because they drink typhoid-contaminated water or someone has bewitched them.

Once goals such as human survival are defined and identified as a common factor between two social systems in contact, the anthropologist can proceed with comparative analysis, evaluating the comparative efficacy of cultural traits including beliefs and values of various societies that are functionally equivalent. This does not mean that the beliefs or values are themselves equally valuable -- exactly the opposite. Comparison in terms of a goal of controlling infant mortality, for example, leads the analyst to conclude that the mortality figures show different results for believing that infants die because they have been bewitched and for the functionally equivalent belief that infants die because they contract typhoid fever. The moment that ethnocentrism is abandoned, even if only for purposes of one specified goal, the comparative method can be brought into play through the human mechanism Erasmus (1961:22-32) labeled "frequency interpretation."

Until goals common to two or more societies are defined, true comparison remains impossible. Herein lies the crucial importance of the common factor, as Malinowski termed it. Inability to compare societies appears to be the effect of logically rigorous cultural relativism. Not only would the theorem pressed to its logical conclusion mean that there would be no justification for applying anthropology (Hogbin 1957:254), but it would also prohibit comparison by defining functionally equivalent phenomena as inherently incomparable components of closed cultural systems.

Adherents of the doctrine of cultural relativism appear to forget that treating communities and tribal societies as independent systems for purposes of single-handed analysis by lone field researchers is nothing more than a convenient fiction. This fiction is fostered and perpetuated by field study grants that are small with relation to the man-hours required to collect data accurately from a social entity of any size at all. The fact that a cultural unit can be identified and described as an analytical entity by an anthropologist who observes it for a year does not mean that it actually is functionally independent. Over longer periods of time, the behaviors of members of small-scale social systems such as anthropologists typically study are

functionally interconnected with those members of interrelated social systems in a larger-scale matrix (Gulick 1955:156-171; Wilson and Wilson 1945:38). This conclusion is shown by the number of cases of necessary modification of conclusions derived from synchronic analysis when a community has been restudied (cf. Lewis 1951; Spiro 1963:ix-xix). This interconnection even between social systems whose members ordinarily view themselves as autonomous is nowhere better illustrated than in the competition between very similar societies. In such competition, usually warfare, certain societies endure while others with virtually identical cultural traits, customs, beliefs, and values, do not (Dobyns, Ezell and Ezell 1963:144-145). As Redfield (1953:145-146) has pointed out, the doctrine of cultural relativism is incompatible with the facts of cultural change.

In order further to clarify the limitations upon the practice of cultural relativism, let us consider Hall's (1959:17) sad tale of a United States "agriculturalist" whose stay as attache in a U. S. embassy in a Latin American country was an unhappy one after he protested "cooling his heels" for forty-five minutes in the outer office of a Minister with whom he had obtained an appointment. Had the attache been taught the local time system details, he could have adjusted himself to it, according to Hall (1959:18), who analyzed the incident entirely in terms of communication. Hall advocated that the U. S. diplomat consciously accommodate himself to Latin American cultural patterns.

It might be said of Hall, as it has been remarked of the French in former Indo-China, that he carried to excess his respect for local social structures with historic antecedents (Soustelle 1950:61). There is a danger that anthropologists, who are these days called upon to serve as consultants on many foreign areas for varied purposes (Heath 1963:2-4; Goodenough 1962:173, 176), will carry their unconscious or deliberate cultural relativism too far and mislead those whom they are supposed to advise.

The treatment of time in different societies has seldom been static over the last several decades. The expression "Our time or your time?" -- la hora americana o la hora mejicana -- is hardly the neutral one Hall (1959:19) implies. Almost always in our experience, nonindustrial populations distinguish "white man's time" from "Indian time," or whatever the particular contrast may be, and recognize the advantage of the technical system. Latin American schools, for example, do not treat time "rather cavalierly." Classes convene on time. In Peru, punctuality may be encouraged by specifying that a meeting will commence "at X o'clock

sharp," expressed either as "la hora en punto" or "X o'clock British time" -- la hora británica. The very terminology reflects the historical process of diffusion of technical time-use into the country. Jokes are directed at "Peruvian time," or la hora peruana. The claim that ethnocentrism causes everyone to hold his own cultural tradition to be the best simply is not consistent with such facts of transculturation.

Returning to Hall's example, consider the position of a minister of state. A school of social work in one Latin American capital city with 2,000,000 inhabitants usually operates on precise time schedules. Once each year it must hold a graduation ceremony, and often the Minister of Public Health and Social Welfare distributes the prizes and awards diplomas. Five hundred faculty members, students, family members, and friends may swelter on velveteen chairs for forty-five minutes or longer awaiting the Minister's arrival. His tardiness does not reflect a specifically Latin American treatment of time. For Latin Americans are not alone in according ministers of state special privileges with regard to infringement upon the norms of time management expected from less prestigious individuals.

Latin American Cabinet ministers have no "counterparts" in Hall's terms, except other cabinet ministers. Certainly they do not consider embassy attaches, and especially not U. S. embassy attaches, as such. Clarification of relative social rank was at issue in Hall's example. The agriculturist who objected to being kept waiting simply demonstrated his lack of familiarity with his own society and the period of time he might be kept waiting to see the Secretary of Agriculture in Washington. There may also have been some element of neo-colonialism in the attitude of the agriculturist.

There is, of course, a perceptible difference between U. S. and Latin American relations between public figures and their public. This difference is not merely one in utilizing time but arises from differing fundamental assumptions as to the innate nature of mankind which are generally accepted in the two areas. In one society people hold a fundamental assumption of inherent equality of rights and personal worth (Holmberg, Dobyns & Vázquez 1961:39). The staff of the school of social work already mentioned implements this same assumption during normal school days in order to cause the least inconvenience to the greatest number of individuals and economize scarce resources (such as professorial salaries). In the other society people hold a fundamental assumption of inherent inequality and differential personal worth (Holmberg 1960:69-70). When the staff of the school of social work cited must function in the wider context of its national society, time comes to be dealt with in terms of this assumption. The use of

time can demonstrate the tremendous social distance between cabinet ministers and ordinary citizens (and in this illustration, women, to boot).

Despite these radically opposed fundamental assumptions, the common factor permits Latin Americans and U. S. citizens to work together in contact situations.

In order to establish mutual relations involving respect, understanding, and benefit neither U. S. conformity to Latin values nor Latin conformity to U. S. values is required (Holmberg 1960:63). Latin Americans and U. S. citizens actually can and often do handle time in much the same ways. They differ in the proportion of their time they devote to least inconveniencing the greatest number and in the proportion they devote to emphasizing social distinctions.

The policy-maker, if he is to make intelligent, adequately informed decisions with regard to foreign areas, needs to be informed accurately by the anthropologist that he has a choice to make. He needs to know that short-term gains may be sought by accommodating policy and/or behavior to the fundamental assumptions of the foreign society. He also needs to know that long-term gains in terms of modernization of agrarian societies may require sacrifice of short-term gains in order to continue to provide a clear model with specific traits toward which those dissatisfied with their own traditions may strive. He needs to be alerted to the danger of short-term accommodation terminating with everyone incapacitated by antiquated social structures inadequate to cope with emerging national societies, as apparently occurred to the French in Indo-China and the Dutch in Indonesia.

Analysis of international relations in terms of cultural relativism, because this is a static principle not taking cultural change and transculturation into account, becomes irresponsible. It can too easily misguide nonacademic policy-makers who uncritically accept "scientific" findings by "expert" anthropologists, who not infrequently become "unwitting specialists-by-default" (Heath 1963:2) simply because no other person has studied the population in a given area, rather than because of true methodological excellence. The first target for scientific analysis of binational or multinational efforts directed toward cultural change is properly the identification of the common measure between them that allows cooperation. Once that identification has been made, the analysis of the change process can begin, and eventually comparative evaluation can be achieved.

III. URBAN-TO-RURAL DIFFUSION

Social scientists seem agreed that social innovations originate in urban centers, among specific elites, and then diffuse outward to non-elite urbanites, and from them to rural populations (Foster 1962:29-31). Physician, priest, teacher, and similar advocates of rural innovation are typically urban, at least in training and inclination, and often in origin.

Knowing that social innovations diffuse from cities to rural populations is not sufficient to plan or carry out effective social change. Accurate planning and effective execution of planned change programs require knowledge of the kind of innovative center a given city is. This provides clues as to the institutions that are changing the culture of rural inhabitants and as to the types of change underway. Research into the actual operation of the urban institutions fomenting change in rural populations can then identify for the planner the mechanisms of on-going change that may be used for fostering accelerated change.

Orthogenetic Cities

Certain large urban centers function to promote a traditional moral order or systematize and reflect upon an old culture. These cities are headquarters for intellectual and religious elites concerned with the interpretation of tradition. They foster change, therefore, but this change is designed to promote a specific cultural Great Tradition. Banaras and Allahabad are cities of this kind in India (Spate & Ahmad 1950:262-267). Peiping has been such a city in China in times past. Liège functioned in this manner in fourteenth-century Belgium. Cuzco preserves in Peru some aspects of such a role from earlier pre-European times. Lhasa was this type of city in Tibet, at least until the Chinese conquest. Philadelphia was such a city in the United States during its early years (for members of the religious Society of Friends, at least), and Salt Lake City, Utah, is still a city of this type for members of the Church of Latter Day Saints (Redfield & Singer 1954:59-60). The Vatican City exercises this type of function for Roman Catholics; Mecca for Muslims (Dobyns 1960).

The residence in Istanbul of the patriarch of the Eastern Orthodox Church makes that historic metropolis to some extent an orthogenetic city. On a smaller scale, many magnets of religious pilgrimage perform an orthogenetic function among the pilgrims, whether they come from city or countryside.

Heterogenetic Cities

Many cities promote the technical changes involved in industrialization rather than devoting themselves to interpreting the past. Their residents create original modes of thought that conflict with old cultural patterns and win their own authority (Redfield & Singer 1954:58).

Administrative Cities. Some heterogenetic cities are headquarters for political elites only. Usually these are national capitals planned and founded to be "free of vested sectional interests" (Spate 1942:623). These include Washington, D. C., in the United States; Canberra in Australia; Ottawa in Canada; The Hague in the Netherlands; New Delhi in India; Brasilia in Brazil. In some cases, an old city was chosen to balance sectional interests, as Madrid in Spain or Rome in Italy (Spate 1942:624, 629). Or these cities are governmental centers for lesser political subdivisions of the country, such as Lucknow, capital of India's pre-independence United Provinces, although it has many commercial as well as administrative functions and a university (Spate & Ahmad 1950:272-273).

The importance of social change initiated by political measures should never be underestimated by the planner. The Civil Rights Act of 1964 has produced significant behavioral changes in the United States, for example. On the other hand, the capacity of legislation to cause social change should not be overestimated, either. Advocates of temperance in the consumption of alcoholic beverages secured a constitutional amendment to the United States Constitution prohibiting the sale of liquors without being able to stop U. S. citizens from drinking them, in a notorious example of overestimation of the power of legislation to change human behavior. Colombia passed agrarian reform legislation in 1936, tried to break up large estates by taxation in 1954 and 1956 without being able to solve its rural land differential tenure problems, and passed new tenure reform legislation at the end of 1961 (Hirschman 1963:96, 123, 137, 138-141, 144).

Political-Intellectual Cities. Other heterogenetic cities house both political and intellectual elites and become centers for broader-scale social innovation. Canberra may become such a city (Redfield & Singer 1954). In the United States, university towns have become rather significant centers for political innovation since the federal government began in the 1930's to hire, borrow, or consult university professors as well as businessmen. Thus, Cambridge, Massachusetts, most impressively, but even Berkeley, California, and Ithaca, New York, play roles in national policy-making far greater than their relatively small populations would justify. They provide by turns the intellectual component that Washington itself lacks, at least

in sufficient supply, because their universities (along with Chicago and others omitted here in the interest of brevity) are centers for accumulation of knowledge that foster innovation (Barnett 1953).

Entrepreneurial Cities. Some heterogenetic cities are headquarters for economic elites only, so that they are extremely important centers of innovation in business organization, in technology, and in technification of production, but not particularly innovative in other respects. The recent history of efforts to build the University of Pittsburgh have underlined the extent to which Pittsburgh remains an entrepreneurial city in the United States (Greenberg 1966), although it is struggling to add an intellectual component to its urban strengths. Hamburg in Germany and Bombay and Cawnpore in India (Spate & Ahmad 1950:274) are other examples of the type.

Primate Cities. The primate type of city fosters social change most effectively. In such a city intellectual, political, and economic elite groups have their headquarters. This concentration of elites in a single city makes it a center for innovation in education, business organization, and other techniques. We adopt here Hoselitz' (1957:43) label of primate city for this type, in a more generic sense than Jefferson's (1939:226) usage to denote urban primacy of a single city in its country. There appears to be no necessary relationship between degree of primacy in population and level of economic development measured by per capita gross national product. Simple size primacy is not even associated with urbanization level (Mehta 1964: 143). The primate city in the more complex sense is a heterogenetic city par excellence. Primacy in this sense permits specialization in various fields of knowledge, exchange of ideas, accumulation of libraries, and other forms of capital, as well as skilled personnel for formal education, science, art, medicine, etc. (Davis & Golden 1954:26).

Very often the primate city is an ocean port settlement (or a metropolitan area including a port) whose urban population occupies an ecological and social position intermediate between the more conservative countrymen and overseas sources of innovation. The primacy of London in England was forged during Roman and Norman times when the country looked to the Continent across the Channel for models of cultural behavior (Spate 1942:625-626). In South-east Asia, the largest primate cities today were founded by Europeans or in response to European presence. In the mercantile period, Manila was founded in 1571, Djakarta in 1619, Bangkok in 1782. In the industrial period, Singapore

was founded in 1819 and Saigon in 1859 as economic bases at tidewater (Fryer 1953:475). This type of port city deliberately founded to serve as a center for moving international commerce (and accompanying ideas) to a continental hinterland dates at least back to the time of Alexander the Great and the establishment of Alexandria, the model for Hellenistic ports of trade (Revere 1957:61). Development investment in primate cities favorably located at the confluence of waterways, rail, highway, and air routes appears better justified than investment in less favorable locations (Mehta 1964:139).

While Hoselitz (1957:43) pointed to the lack of traditional bonds in such cities as a factor in their change-promoting role, Ginsburg (1955:461) like Spate (1942:628) noted that the Thai indigenous capital, Bangkok, has acted as the evolutionary medium spreading throughout the country innovations from industrial society, and Fryer (1953:490) pointed out that it monopolizes Thai foreign trade.

Lima, including the port of Callao, exemplifies the primate city very well, concentrating the Peruvian national capital, the largest university and normal schools and most prestigious secondary schools in the country, about 47 percent of all banking offices and three-fourths of the bank deposits in the country (Dobyns, Doughty & Holmberg 1965:203), originating and receiving one-third of all telegraphic communications, holding 52 percent of the total hospital beds and 72 percent of the hospital physicians (*ibid.*:204-205) in the country. Other port primate cities include Calcutta (Spate 1942:628; Spencer 1951:337), Bombay (Spate 1942:628; Spencer 1951:337), Rangoon, Burma (Spate 1942:628; Spate & Trueblood 1942:56), Dublin, Eire (Spate 1942:629; Toynbee 1934:II:426), New York, U.S.A. (Jefferson 1939:229).

Primate cities are, however, not necessarily ports. Lima exercised primacy in Peru long before it grew physically outward to absorb its port of Callao into one metropolitan area. Santiago exercised primacy in Chile before similarly expanding to the port of Valparaiso and forming a single metropolitan area (Morse 1965:47-48). Much smaller cities exercise primacy over their own hinterlands. In the United States, several cities serve on the one hand as centers of innovation for the rural and town population while remaining dependent on the other hand upon economic and political events in the hinterland. The small city of Reno, for example, stands in this relationship to the state of Nevada and has done so for a long time, even when it numbered 23,000 inhabitants or less (Clark 1949:29-31). Small urban settlements linked to local hinterlands for some purposes, at least, are typically young relative to agricultural

villages in the area, and market-transport oriented. Thus, they may be classed as ferry towns, road-junction towns, river-junction towns (Dobby 1942:232), or railroad or highway towns and trading centers (Bailey 1950:100, 102).

The primate city itself forms a theatre of social change as its own population alters its cultural behavior after that of nonmember reference groups. The primacy of this type of city becomes established in the first place by rural-urban migration, both internal and international.

This process of accretion by addition of migrants makes the primate city the place in a country where nationalism develops (Jefferson 1939:232). The national capital is often, although not invariably, a primate city binding a federation and receiving "vital external influences" which stimulate its potentialities (Spate 1942:627). On the one hand, the loyalties of internal migrants shift from hundreds or thousands of local cultural traditions as they learn a distinctive national brand of industrial culture patterning from nationalists among the cosmopolitan elite. On the other hand, the international migrants learn the elements of their new nationality in the primate city also, save for those exceptional instances where they go directly to rural areas, as in Israeli Kibbutzim (Spiro 1963:53) or moshavim (Weingrod 1966), the nineteenth century railroad-sponsored farm settlements in the United States, the twentieth century ranch-sponsored immigration of Basque shepherds as an occupationally specialized group sought to fill existing needs in the rural areas of the Rocky Mountain states, in Okinawan agricultural colonies in Bolivia, etc. National culture emerges from discussions of politics, strikes, prices, scandals, and the important urban sports -- bullfighting and soccer in Latin American primate cities (Mangin 1959:29).

The largest city in many a country contains a disproportionate share of the national urban population (Jefferson 1939:231), so the relative degree of population primacy provides a suggestive, if not conclusive, index for the identification of culturally primate cities. A basic list of such cities appears in Table I. Cities can, of course, exercise primacy over less urban regions without gaining absolute national primacy, as already indicated. New cities have appeared while the U. S. economy progressed, and their rise retarded the growth of older cities (Madden 1958:159).

The migration process populates the primate city with numerous differentially urbanized groups, intermediate in culture and behavior between the cosmopolitan elite and the myriad local rural subsocieties (Hoselitz 1962:172). These urban dwellers seem forced by the requirements of urban life

to innovations rural residents would not make if left to themselves (Davis & Golden 1954:25). This cultural gradation apparently facilitates the diffusion of elements of industrial culture to rural areas by providing an unbroken continuum of people changing from local toward cosmopolitan behaviors. At the same time, it imposes limitations on the rapidity of change. In colonial or former colonial areas, differential urbanization coincides oftentimes with ethnic group differentiation in the urban population. In Russia, immigrant governing groups assimilated rural groups, so a majority of the U.S.S.R. cities over 100,000 population were ethnically diverse by World War II (Harris 1945:466). Racial segregation of European, Indian, and Chinese immigrants and indigenous peoples characterizes Manila, Djarkata, Singapore, Saigon, and Bangkok (Fryer 1953:493). Religious differences help to differentiate New Delhi (Spencer 1951: 336).

The content of cosmopolitan culture seems often to be learned most effectively by adults in voluntary associations whose membership crosscuts the social boundaries of the differentially urbanized groups, bringing individuals ranging from long established to newly arrived migrants into intimate social relations. Such voluntary associations (most specifically a patriotic one) provided the major integrative interactions between persons of different class in an intensively studied New England seaboard city (Warner & Lunt 1941:120-121). Regional clubs composed of migrants from specific towns or districts in the provinces perform this function in Lima. In the clubs, customs marking a person as rural are discouraged, and visible traits such as hair style, coca chewing, and clothing differences disappear first (Mangin 1959:28). Language may be the first behavior to change when a major trade tongue is used in official documents, in the market, and as the language of common discourse between persons of diverse origins. Thus, adoption of Russian in cities in the U.S.S.R. proceeds even when non-Russian languages are officially encouraged (Harris 1945:472-473).

Formal educational institutions urbanize juvenile migrants and children of migrants. The economy of educating large numbers of students rather than a few favors the development of urban over rural school systems. Thus, this factor, coupled with selective migration of better educated rural natives (Bradfield 1963:59) makes literacy highest in the largest cities and lowest in rural areas, as in the U.S.S.R. (Harris 1945:472).

TABLE 1. PRIMARY METROPOLITAN AREAS IN RELATION TO THE SECOND AND THIRD CITIES IN THEIR COUNTRIES (POPULATION) (International Urban Research 1959:37-63; Abu-Lughod 1965: 320, 323; Teran 1963:295-296; Direccion de Estadistico y Censos 1965:12-14; Anonymous 1962:20-21; Anonymous 1965:13).

Nation	Date	Ratio	Cities & Population in 1,000's
1. Peru	1961	100:8:6	Lima 1,641 Arequipa 135 Trujillo 100
2. Hungary	1954	100:8:7	Budapest 1,783 Miskolc 135 Debrecen 118
3. Philippines	1955	100:10:5	Manila 2,348 Cebu 240 Iloilo 123
4. Argentina	1955	100:11:9	Buenos Aires 5,750 Rosario 630 Cordoba 490
5. Denmark	1955	100:13:10	Copenhagen 1,293 Aarhus 169 Odense 123
6. Romania	1956	100:13:11	Bucharest 1,237 Cluj 155 Timisoara 142
7. France	1954	100:13:13	Paris 6,737 Lille 899 Marseille 798
8. Cuba	1955	100:14:9	Havana 1,315 Santiago 180 Camaguey 120
9. Austria	1955	100:14:12	Vienna 1,865 Linz 255 Graz 230
10. Mexico	1955	100:14:13	Mexico 3,900 Guadalajara 530 Monterrey 500
11. Iran	1956	100:19:17	Teheran 1,513 Tabriz 290 Isfahan 255
12. Bolivia	1962	100:20:20	La Paz 400 Cochabamba 80 Santa Cruz 80
13. Chile	1955	100:21:15	Santiago 1,600 Valparaiso 335 Concepcion 245

Nation	Date	Ratio	Cities & Population (000's)
14. Bulgaria	1956	100:22:17	Sofia 726 Plovdiv 163 Varna 120
15. Burma	1955	100:25:14	Rangoon 775 Mandaley 190 Moulmein 108
16. United Kingdom	1956	100:25:24	London 10,491 Birmingham 2,576 Manchester 2,499
17. Finland	1955	100:28:25	Helsinki 514 Tampere 144 Turku 127
18. Morocco	1955	100:29:24	Casablanca 750 Marrakesh 220 Tangier 183
19. Turkey	1955	100:30:25	Istanbul 1,365 Ankara 408 Izmir 336
20. Czecho-slovakia	1955	100:31:25	Prague 971 Brno 304 Bratislava 239
21. Venezuela	1955	100:36:16	Caracas 1,000 Maracaibo 355 Barquisimeto 155
22. E. Germany	1955	100:37:36	Berlin 2,049 Leipzig 801 Dresden 741
23. Israel	1955	100:40:27	Tel Aviv-Jaffa 572 Haifa 230 Jerusalem 156
24. W. Germany	1955	100:41:39	Essen-Dortmund-Duisberg 5,353 Berlin 2,195 Hamburg 2,107
25. Egypt	1960	100:42:8	Cairo-Giza 3,596 Alex- andria 1,513 Ismailiya 276
26. S. Africa	1955	100:42:35	Johannesburg 1,825 Cape Town 760 Durban 640
27. United States	1956	100:43:40	New York 14,280 Chicago 6,123 Los Angeles 5,640
28. Sweden	1955	100:45:22	Stockholm 1,021 Goteborg 458 Malmo 220

Nation	Date	Ratio	Cities & Population (000's)
29. China	1953	100:45:43	Shanghai 6,204 Peking 2,768 Tientsin 2,694
30. U.S.S.R.	1956	100:48:13	Moscow 7,300 Leningrad 3,400 Baku 933
31. Taiwan	1955	100:50:39	Taipei 704 Kaochiung 352 Tainan 275
32. Indonesia	1956	100:50:45	Djakarta 1,871 Surubaja 936 Bandung 839
33. Algeria	1954	100:53:25	Algiers 587 Oran 310 Constantine 149
34. Colombia	1963	100:53:52	Bogota 1,406 Cali 751 Medellin 733
35. Switzer- land	1955	100:55:38	Zurich 588 Basel 326 Bern 221
36. Japan	1955	100:56:15	Tokyo 11,349 Osaka 6,404 Yahata-Shimonoseki- Kokura 1,659
37. New Zealand	1956	100:58:49	Auckland 404 Wellington 233 Christchurch 199
38. Belgium	1956	100:61:44	Brussels 1,372 Antwerp 833 Liege 598
39. Pakistan	1955	100:66:33	Karachi 1,318 Lahore 864 Dacca 436
40. S. Korea	1955	100:67:31	Seoul 1,575 Pusan 1,049 Taegu 489
41. Saudi Arabia	1954	100:67:67	Mecca 150 Jidda 100 Hofuf 100
42. Ecuador	1963	100:69:12	Guayaquil 506 Quito 348 Cuenca 60
43. Yugo- slavia	1955	100:72:29	Belgrade 510 Zagreb 368 Ljubljana 146

Nation	Date	Ratio	Cities & Population (000's)
44. India	1955	100:77:43	Calcutta 5,700 Bombay 4,400 Delhi 2,435
45. Malaya	1955	100:78:56	Kuala Lumpur 370 Penang 290 Ipoh 208
46. Australia	1954	100:79:27	Sydney 1,869 Melbourne 1,470 Brisbane 502
47. Poland	1956	100:83:44	Katowice-Zabrze-Bytom 1,921 Warsaw 1,595 Lodz 844
48. Nigeria	1955	100:85:32	Ibadan 475 Lagos 393 Ogbomosho 147
49. Brazil	1955	100:88:23	Rio de Janeiro 3,750 Sao Paulo 3,300 Recife 860
50. Spain	1955	100:90:35	Madrid 1,840 Barcelona 1,655 Valencia 640
51. Italy	1956	100:91:73	Milan 2,154 Rome 1,959 Naples 1,565
52. Netherlands	1955	100:92:75	Amsterdam 1,017 Rotterdam 936 The Hague 767
53. Canada	1956	100:95:29	Montreal 1,714 Toronto 1,632 Winnipeg 502
54. Syria	1955	100:99.7:41	Damascus 409 Aleppo 408 Hama 168

There are twenty primate cities triple in size compared to the second largest: Lima, Budapest, Manila, Buenos Aires, Copenhagen, Bucharest, Paris, Havana, Vienna, Mexico, Teheran, La Paz, Santiago de Chile, Sofia, Rangoon, London, Helsinki, Casablanca, Istanbul, and Prague.

There are in addition a dozen double-sized primate cities: Caracas, East Berlin, Tel Aviv-Jaffa, Essen-Dortmund-Duisberg, Cairo, Johannesburg, New York, Stockholm, Shanghai, Moscow, Taipei, and Djakarta.

Approaches to Analysis of Urban-Originated Change

The analysis of cultural change requires that the social scientist collect data of many kinds besides the basic population counts of the type summarized in Table I. This table constitutes only the very first step in ordering data. The social scientist must immediately go on to assess the significance of many variables besides comparative population size. In order for data collection and its analysis to go forward, however, the social scientist must formulate meaningful analytical categories within which to compare different settlements. Some such categories have already been indicated in our earlier summary of the key role the city plays in rural cultural change. Other pertinent categories have been more or less well defined by students of the cultural change process.

Given the general tendency for cultural innovations to originate in urban populations and diffuse later to rural ones, one general method for analyzing such cultural changes compares various settlements on an urban-rural continuum. For the comparison to be fruitful, the different settlements should be evaluated in terms of comparable phenomena at the same period in time. Much of the difficulty in studying cultural change arises from the problems encountered in defining comparable phenomena. In discussing a general method for analyzing urban-to-rural diffusion, therefore, let us begin by reviewing some appropriate concepts.

The first general concept we introduce is that of social scale. In analyzing a society, scale refers to the number of persons "in relation" and to the "intensity" of their relations (Wilson and Wilson 1945:25). The Wilsonian concept of human society holds the participants in all societies to be "equally dependent upon one another." What varies is the geographic and historic range of their interdependence. The Englishman, for example, depends upon people over the entire world to provide him with food, but the Bushman out on the Kalahari desert depends for sustenance only upon neighbors close by. This contrast actually appears to be one between the urban settlement and the rural settlement, particularly the nearly self-sufficient food-producing tribal community. Redfield (1941:22) pointed out that the urban Merida populace in Yucatan is interdependent with producers in other parts of Mexico and in other nations for its food supplies but that it also draws food from its own hinterland. At the other extreme of the analytical continuum the X-Cacal tribal village studied by Villa was largely self-sufficient in agricultural produce. Maize was grown for consumption rather than for sale. These tribal Indians exported only chicle collected in the rain forest and hogs (Redfield 1941:162).

On another dimension, the ideas accumulated during 2,500 years directly affect the Englishman. Only those ideas originating in prior generations which can be orally communicated by elders with lifetimes overlapping those of a given generation can affect the Bushman. Thus, the Wilsons (1945:26) concluded that while the total intensity of relations does not vary from one society to another, the intensity of particular relations does. As a consequence, the amount of one's dependence upon contemporaries and particularly neighbors decreases as the scale of one's society increases.

One measure of the intensity of relations within a group can be in terms of economic cooperation. That is, the analyst asks what proportion of the society's total economic cooperation is carried on within the group being studied. This kind of measure has been profitably employed for the analysis of cultural change. Employing the urban-rural continuum model for analysis, Redfield (1941:xvii) differentiated between tribal life and even peasants participating in industrial civilization in these terms. He couched his analysis in terms of commercial dealings. These were lacking in the tribal settlement where the value of the main crop did not reflect the pricing mechanisms of the markets which established maize prices for peasant cultivators. In the urban center analyzed, commercial dealings were general.

The use of capital inherited from previous generations is one form of economic cooperation (Wilson & Wilson 1945: 26). The sheer quantity of inherited wealth represented in the city marks it off from the country. In the urban center, wealth comes to define to a large extent social status (Redfield 1941:xviii). The city of Merida, which constituted the urban extreme in Redfield's analysis, largely controlled Yucatecan agriculture. The owners and managers of some 80 percent of the sisal-producing farm units on the peninsula lived in the city (Redfield 1941:20). Few wealthy individuals reside outside Merida (*ibid.*: 21). Few opportunities for productive investment of accumulated capital reportedly exist in rural peasant or tribal villages in this region. There women wore gold chains which conspicuously stored wealth, which otherwise went for luxuries such as sewing machines or fine clothing (Redfield 1941:165).

In the Sudan, gold bracelets are a widespread form of family savings and status symbol (McLoughlin 1964:170) with much the same effect on productive investment. Such jewelry may be economically important in change only to the extent that it can be pawned, as in trading posts among Navajo Indians in the U. S. (Adams 1963:195ff.), and in Malaya (Swift 1957:327), etc.

At least one method for quantified comparison of settlements in socio-economic terms has been developed. This is Kunkel's scale of economic autonomy. This seeks to measure the degree to which local village economies are integrated into the national economic system, and it was worked out by utilizing ethnographic data from Mexican communities. Since Kunkel sought correlations between social change in noneconomic behaviors and economic autonomy, he actually developed a "national culture element" index as well as an index of economic autonomy.

The items entering into Kunkel's national culture element index are sufficiently specific to Mexico, or at least to New World Hispanic culture, to inhibit utilizing them for the analysis of integration into other varieties of national culture. He employed a dozen dichotomous measures of national versus traditional behavior: 1) absence or presence of a hierarchy of local political offices, 2) paid or unpaid officials, 3) absence or presence of a hierarchy of religious offices, 4) separate or combined political and religious offices, 5) wide public or family financial responsibility for festival sponsorship, 6) absence or presence of compulsory communal labor, 7) open sale of land or transfer only to fellow residents, 8) unimportant or important extended family, 9) self-choice or parental choice of spouses, 10) stable or easily broken marriages, 11) genetic kin can or cannot be ritual kin, 12) persons of greater wealth or those on the same economic level are sought as ritual kinsmen (Kunkel 1961:57-58).

Kunkel's (1961:59) index of economic autonomy is, however, couched in sufficiently generalized terms to permit it to be employed for direct comparison of settlements engaged in agriculture in different nations. The items on this index are: 1) exporting a cash crop, 2) internal wage labor and cash relations, 3) insufficient land being available for all the population, 4) external wage labor, and 5) importing staple foods.

We have previously presented the results of an application of Kunkel's method to Peruvian data (Dobyns, Doughty & Holmberg 1965:14-15, 17). We found that the correlations between the national culture element index and economic dependency which Kunkel found in Mexico did not hold up in Peru. The national element index seemed, nonetheless, to order Peruvian settlements on a reasonable cultural continuum. Kunkel (1961:63) concluded that needs which cannot be satisfied by a settlement with an autonomous economy must be created or a scarcity of land achieved in order to incorporate villages into a nation.

A second measure of the intensity of relations within a group can be the proportion which spoken and written

communication within it constitutes of the society's total intellectual interchange (Wilson & Wilson 1945:26). In the case of Yucatecan society, all communication lines with the peninsula and extrapeninsular world converge in the city of Merida (Redfield 1941:19). This city is the center of enlightenment for the peninsula, with a university, normal school, preparatory school, art school, music teachers, etc. It has a press and local writers, a theater, and many voluntary associations devoted to social affairs (Redfield 1941:20-21).

Social segmentation can affect this form of communication very seriously. Thus, Indian villagers behave often in the frame of reference of cumulative folk wisdom which tells them to bend before government pressures but to spring back as soon as these are withdrawn. This folk philosophy motivates key behavior in spheres traditionally regarded as no business of government, including cultivation practices. The differences in language, dress, and psychological set between urban Indians and rural villagers channel relations between them within social segments rather than across their boundaries (Lambert 1964:422-423). Where segmentation does not impose such barriers, moving pictures and fan magazines, among other forms of communication, contribute to cultural change, as they have in Indonesia (Willner 1958:229-230; Barnouw 1966:20).

A third measure of the intensity of relations within a group can be the proportion of emotion expressed within it to the total expressed in the society. In industrial society, books, pictures, musical scores, and practical utensils and tools are both widely distributed and frequently inherited (Wilson & Wilson 1945:26-27). Both the diffusion and accumulative aspects of civilization are well exemplified by a short list of events in Merida, Yucatan. The first press was established in 1813, the first literary magazine was founded in 1841, a normal school was opened in 1868, a telegraph line was completed to the national capital in 1876, a railway to the port of Progreso was inaugurated in 1881, and a daily newspaper was started in 1882. An electric power plant began work in 1892, and a large cordage mill opened in 1901. Street paving began in 1902. A motion picture theater opened in 1908 (Redfield 1941:34). These events document the diffusion to Merida of industrial technology and the accumulation of mechanical and intellectual capital through time well beyond the accurate recall of nonliterate peoples with only oral traditions of their past. By way of contrast, nearly the only industrially produced items diffused to an accumulated among the X-Cacal tribal Mayas were sewing machines, coins of various nations, and metal tools. Thus, capital accumulation remained minimal,

as contact with and participation in modern industrial society remained minimal.

In-group Cooperation. A fourth measure of the intensity of relations within a given group can be the relative value it sets on in-group cooperation as compared to out-group cooperation. Primitive societies have characteristically valued cooperation within local groups of small size. Industrial society, by contrast, demands cooperation with distant groups. Political groups pursue loyalty across all sorts of group boundaries. Believers in Utopian faiths such as Christianity and Communism pursue an ideal of worldwide cooperation (Wilson & Wilson 1945:27). In analyzing Yucatecan society, Redfield (1941:xix) stressed that Maya tribal society in Quintana Roo placed a moral value on socially approved behavior. He saw organized religion as a force unifying the tribal community. He viewed urbanization as synonymous with secularization, with the organized Roman Catholic Church in Merida simply one interest group competing with many others. Redfield (1941:187) stressed that the rights and acts of the individual in the tribal settlement tended to involve the rights and actions of others. He (1941:xvii) labeled the tribal state that of culture organization, contrasting it with urban "disorganization." Redfield's use of value-laden terminology in his discussion indicates that he placed something of a positive evaluation on the tribal condition and a negative valuation on the urban condition. Yet his own data indicate that the populace of Merida was civilized in terms of cooperation between geographically or ethnically or racially distant groups, whereas the tribal populace studied was primitive in terms of ethnocentric hostility toward all outsiders. Merida at the time Hansen studied it had long been a target for migration from rural Yucatan and elsewhere. The city contained residents who hailed from fifty-six foreign nations. What Redfield (1941:23) termed "Syrians" and "Orientals" formed the two largest immigrant groups, supplemented by Negroes of Caribbean origin. The urban populace included some Europeans unmixed with American Indians, some unmixed Indians, and a majority of persons with mixed ancestry.

The X-Cacal tribal Mayas, on the other hand, considered themselves Indians, even though they apparently exhibited some phenotypical evidence of admixture (Redfield 1941:54). They were hostile to Mexicans not members of the tribe (Redfield 1941:53). They constituted a single caste in contrast to the three-class structure of the Merida urban population. This was analytically divided into a lower, middle, and upper class, with the lower class further divided into a group dressing in industrial contemporary style and another in traditional regional style (Redfield

1941:84). The peaceful tenor of life has been several times rudely upset in Indian cities, however, where in-group loyalties to speakers of a given language have generated competition for control of state governments (Lambert 1964: 419), since cooperation outside one's language group is not highly valued. So it is fairly clear that the Wilsonian emphasis on in-group loyalty is not analytically misplaced in studying urban influences on rural hinterlands. For segmented urban populations that pay primary allegiance to their own social in-groups may seriously circumscribe the lines of urban-rural influence.

The relative dogmatic assertion of in-group and out-group unity and continuity may help to measure the intensity of relations within a given group. This assertion is typically a matter of actual common descent within a small group, but it becomes couched in terms of common race or humanity in larger ones (Wilson & Wilson 1945:28). Legal responsibility for social behavior spreads along a web of kinship relations in a tribal village such as Tusik in Quintana Roo. There the father of a girl who had indulged in sexual relations with a married man received fifty lashes in punishment, the married man involved received twenty-five strokes, and the girl herself received none (Redfield 1941:190).

In the city of Merida, in contrast, women are able to find employment, and some would rather earn their living in the city than live as housewives in provincial towns. Marital unions are established and dissolved with little formality (Redfield 1941:191). Thus, the kindred is the in-group in Yucatecan tribal society, but not in the peninsular metropolis. Illustrating this same trend toward generalization of social responsibility away from the kindred, the caste groups playing state politics in India are now usually not endogamous jati, but confederations thereof with no previous existence as solidarity groups (Lambert 1964:420). In Indonesian cities, older migrants a decade ago were already complaining about and evading kin obligations (Willner 1958:230).

The degree to which a given group expresses a sense of continuity and unity, compared to its expressions of such continuity and unity with outsiders, provides additional measurement of the intensity of relations within the group (Wilson & Wilson 1945:28). In the Yucatecan example, the Quintana Roo Maya Indians maintain tribal independence with a strong sense of continuity since the War of the Castes in the middle of the past century (Redfield 1941:9). In a Pakistan village, cooperation occurs in expectation of gains to help maintain one's own kinship group (Honigmann 1960:295), not in terms of any more abstract or larger

reference group. In contrast to tribal or peasant stability, in the Yucatecan state capital, the neighborhood organization thought to have functioned a century ago was largely broken down by a quarter of a century ago (Redfield 1941: 26-29). Thus, unity with outsiders, or the conversion of former outsiders into members of the urban in-group, had proceeded apace, in contrast to the rural situations mentioned.

The amount of social pressure brought to bear within a given group as compared to that exerted by outsiders can also help to measure the intensity of its internal relations (Wilson & Wilson 1945:28-29). For example, a Brazilian woman of whatever class does not dare to complain about her husband's infidelities unless she belongs to a Protestant congregation. Such a group enforces a single standard of sex behavior on its members (Willems 1955:331) and brings strong social sanctions to bear on errant husbands. This leads us to a discussion of formal means for applying social pressure and related sanctions.

Governmental Authority. Some of what we have already said in this chapter implies what we now state explicitly: the civil government of a nation may act to foster either cultural stability or change among its citizens. In order to discover just what particular mixture of tendencies a particular government works out requires careful observation and analysis of its pronouncements and programs. Beyond this, however, an understanding of the success or failure of a given government to achieve its change or stability goals requires a close examination of the functioning of governmental authority in the various sectors of the national population.

In order for any national government to succeed in promoting industrialization and related cultural change, its authority must extend effectively to those populations it wishes to reform. In actual fact, the writ of the national government often does not run in precisely those sectors of the population it most wishes to modify. It is methodologically useful, then, to formulate one species of analysis of social change in terms of behavioral continua with relation to governmental authority.

At one end of the continuum one can envision a (surely hypothetical) population sector which accepts governmental authority without question or reserve. At the opposite end of this continuum one can envision another sector of the population which rejects all governmental authority. Again, this is a somewhat hypothetical extreme, for in fact a population that successfully rejects all authority of one government tends to accept that of another, or to create a state of anarchy completely foreign to the requirements

of modern industrialized society. The alienation of subordinate subcultural groups can reach very nearly to this hypothetical extreme, however, when contraculture or countermores foster open and violent rejection of governmental authority (Yinger 1960:629; Lasswell & Kaplan 1950:49), as is beginning to occur in United States cities with large and seriously disaffected Negro populations. Between the ideal-type extremes of this authority continuum would be found all gradations of admixture of the two ideal types.

This mode of analysis highlights the significance of surviving tribal organization within the modern nation-state. For the analysis of populations in terms of such a conceptual continuum quickly exposes the difference between the tribesman who ignores central government authority as he obeys tribal custom and the citizen subject to the rules of ordinary civil government. This distinction emerged clearly from Redfield's (1941:52) study of urban-to-rural diffusion in the Peninsula of Yucatan. In the jungles of Quintana Roo, the X-Cacal Mayas had not accepted the sovereignty of the Mexican government. They regulated their behavior in terms of the customary rules of their own tribe. Each man planted his maize field subject to X-Cacal principles, not the central government's ejido system, and defended X-Cacal territory against other Indians and Mexican citizens. The X-Cacal chieftains serve for life, in contrast to rules of the civil government of villages within the area of authority of the central government, where municipal officials were elected annually (Redfield 1941:53).

In another example, Bedouin tribes in the Near East traditionally rejected governmental authority, defended tribal territories, and exacted tribute from travelers. The Turks and then the British in Palestine gradually increased the efficiency of government to the point of forcing the Bedouin into limited agriculture and wage labor and smuggling. With Israeli independence, the Bedouin remaining in that new nation have rapidly changed many dimensions of their behavior as the Israeli government has imposed an effective pax israelica. The Bedouin now live from wage labor, followed in importance by smuggling, cereal farming and livestock production compensated typically in cash instead of kind as was traditional. As a result of the loss of fear and rise in income, the formerly nomadic Bedouin are building permanent houses (tin huts, wooden barracks, houses of sun-dried brick and even stone) and abandoning their tents. The main surviving tribal traits are the large-scale smuggling and a dispersed settlement pattern irksome to Israeli land-use planners (Amiran & Ben-Arieh 1963:161-162, 165, 167-169, 172-174, 178) in a small nation short on exploitable lands.

Even where nomads are not tribesmen, their way of life is antithetical to close governmental control and the requirements of industrial society, including formal education, which we shall discuss below. Among transhumant Greek shepherds, the individual owes time, loyalty, and energy almost exclusively to his or her family and the grazing unit or "company" into which two or three extended families unite (Campbell 1963:74). People are therefore divided into two groups from the shepherd's viewpoint: kinsmen and strangers. The former call forth obligation and confidence, while the latter are distrusted and shepherds are morally indifferent toward them (Campbell 1963:93). Insofar as the shepherds accommodate themselves to existence within the Greek state, they do so by establishing patronage relations with sedentary professional men such as attorneys or doctors and merchants who act as intermediaries with authorities (Campbell 1963:94-95).

Professional Enlightenment. One of the characteristics of modern industrial civilization is its conscious and deliberate teaching of the young, employing professional educational specialists for the task. In primitive society, enculturation is the task of all adults and also their responsibility. While some instruction is formal, much is not planned and scheduled. In urban society, informal learning survives, but a high proportion of total instruction is formally organized and conducted by professional specialists.

In Yucatan, the X-Cacal Mayas carried on their independent existence without formal schools, save for an occasional brief acceptance of a Mexican government teacher. Only two special religious functionaries were somewhat literate at the time of Villa's study (Redfield 1941:54). Where serfdom survives, literacy and other formal learning may be regarded much as tribesmen regard it -- as unnecessary (Vázquez 1961:39). The peasant village is frequently caught in the network of professional enlightenment, on the other hand. The post-revolutionary village Redfield (1941:46) studied in Yucatan had, for example, benefitted from a school since 1910, so that most residents had some formal education, even though most instruction was conducted in Mayan. The provincial trading center also tends to be an administrative center for the national school system (Vázquez 1965a:29). In Yucatan, the railway municipal capital town studied by Redfield (1941:37) was such a regional administrative headquarters. It had a three-teacher public school and 40 percent literacy, with a few people regularly reading city newspapers.

The Yucatecan capital city boasted, when studied by Hensen, primary and secondary schools and some institutions

of higher learning as well: a preparatory school, normal school, art school, and university functioned in Merida. The last included a medical school and granted degrees in pharmacy and law. Over 70 percent of the urban population reportedly was literate, and daily newspaper circulation ran into the thousands (Redfield 1941:20, 24).

Medical Therapy. Another very significant analytical category is the type of medical therapy employed by a given population. The physician graduated from a medical school and teaching hospital in North America or Europe might view this category as a relatively simple one of presence or absence of his brand of therapy. The social scientist senses that the situation is not nearly so simple. We may discern much the same kind of heterogeneity of competing medical therapies in the urban context as exists in economic activities contrasted with the relatively unified situation in tribal society.

In Yucatecan terms, the X-Cacal tribesmen viewed human disease as something interdependent with moral formulations and religious concepts. Medical therapy was provided by shaman-priests (Redfield 1941:xx). Disease was attributed, in other words, to the ill person's failure to make enough, or the correct, pious offerings (Redfield 1941:308). The Peruvian serf, isolated socially, defines many human, animal, and plant ailments as visitations of the wrath of the gods for human transgressions (Vázquez 1952:51, 71).

The peasant villagers, already affected by the process of diffusion of ideas from the city, can choose between modern medicines, Roman Catholic prayer, and propitiating aboriginal deities (Redfield 1941:312). Sometimes the government provides a sanitarian or medical subprofessional to administer a medical post (Andrews et al. 1965:84-85).

In the provincial town of the Yucatecan Peninsula, the individual who feels ill can choose between the shaman-priest, ambulant curers, resident women curers, spiritualists, and a doctor making regular visits from the city (Redfield 1941:312-313).

In the city itself, the Merida resident in poor health has the same choices as the town-dweller, plus resident physicians and hospitals. Governmental authority opposes the practice of folk medicine, yet even black magic occurs in Merida. Curing provides individuals with a means of livelihood in the city as in the town (Redfield 1941:316-325). Witchcraft, not reported from the tribal Mayas, apparently was mentioned with increasing frequency in town and city (Redfield 1941:336), reflecting rising levels of psychological stress.

Religious Belief. Empirical scientific analysis makes a minimum of axiomatic assumptions. One is that "the material characteristics of reality are everywhere comparable." The magical thought of the tribesman lacks this fundamental scientific assumption and thus limits his scientific development despite observations of factual connections (Wilson & Wilson 1945:64, 71). In analyzing cultural variations in Yucatan, Redfield (1941:xix) tended to think of the contrast between X-Cacal Maya tribal society and urban civilization of Merida in terms of a continuum from a unified and holy life-way to a diffuse and secularized way of life characterized by holidays and in which the organized Roman Catholic church was reduced to the status of one interest group among many competitive ones. He stressed the moral value that tribal society placed upon socially approved behavior and the unifying influence of religion on the tribal community. As mentioned in another context, Redfield (1941:187) noted that the actions and rights of tribal individuals involve those of others because of pervasive kinship relations. So he viewed the tribal settlement as an organized community.

The city of Merida was characterized by the opposite condition in Redfieldian terms, so he referred to it as disorganization. Perhaps disarticulation would be a more neutral and accurate designation for the state of religious belief in Merida. For the truth of the matter was that the city contained competing systems of religious belief, rather than a simple loss of all belief. To be sure, the atheistic bent of Mexican socialism in the 1920's and 1930's recruited adherents in Merida. The differentiated religious belief systems continued, however, including folk Catholic belief very similar to the unitary belief system of the X-Cacal tribesmen which suffices for large segments of the urban population (Spitzer 1958:4, 13-16). Formal Roman Catholicism preached often by foreign missionary priests enlists a smaller portion of the population (Spitzer 1958:3, 5-7, 9-10). In addition, the city has Protestant sects and significant numbers of spiritualists (Redfield 1941:310, 317). Thus, a variety of belief systems competes for adherents in the urban context. Secularism amounts simply to one of the competing belief systems available to urban residents. Once again, the city is marked by heterogeneity of religious belief and practice, rather than by complete opposition to the unitary belief of the rural populace.

Social Change Mechanisms

Urban centers of innovation influence rural populations through the diffusion of ideas, but ideas diffuse through people. Thus, the designer of social change needs to know what mechanisms for communication with rural hinterlands exist around specific cities.

Transient labor. Very often social innovations are carried directly from city to countryside by individuals who spend some time in each. The volume of transient labor in cities may be significant in rural change. Persons of rural origin who work and live for a period in a city in India return to their native towns or villages or farmsteads with new skills, attitudes, and ideas (Crane 1955: 467). Vicos Indians learned on Peruvian coastal plantations, unionized by urban organizers, the concept of the strike, which they later applied to Vicos school affairs (Holmberg & Dobyns 1962:109). Having a new city-learned skill does not always mean that the rural dweller can employ it in the country. Nor does having a new idea permit changing anything unless the rural social system is sufficiently permissive to accommodate the innovation. The Colta Lake region in south-central Ecuador appears to have 80 to 90 percent of its male population absent engaged in urban wage labor at any given time, yet it seems to have remained stable and remarkably unchanged for a long period (Maynard 1965:139). Transient laborers may acquire skills applicable only in the city. They may have little or no contact with urbanites which is meaningful in terms of social change. Sex differentials in migration which leave women always at home rearing children minimize migrant male influences toward innovation, whereas female experience at schools or domestic work in the city can produce rapid domestic changes, as occurred among Papago Indians several decades ago (Woodruff 1939:241-246). The length of absence of the laborer and the nature of his exposure to industrial society are important in determining his influence on rural settlements along with the degree of his economic success. Pensioners are often key advocates of social change in rural areas (Lambert 1962: 136). Former conscripts trained in urban behaviors are important innovators in rural settlements where formal education is not common, as at Vicos (Holmberg 1965:6; Doughty 1965:16), and boundary-maintaining mechanisms do not inhibit innovation following external models, as among Cochiti, Zuni, and Taos Pueblo populations (Adair & Vogt 1949). Students who return to rural homes after an urban education constitute another influential group of innovators in rural life (Dobyns 1965:27).

Visiting among Kinsmen. Where rural-to-urban migration occurs, the maintenance of affective ties among kinsmen becomes a significant factor in the rate of social change. When urban dwellers periodically visit rural kinsmen, they foster innovation, sometimes quite consciously and deliberately. The innovative process also accelerates when rural dwellers visit urban kinsmen.

Indian villagers are inspired to change by the example of their urban relatives (Dube 1955:230-231). Greek men of peasant origin who succeed in urban professions by gaining a formal education lend prestige to innovation in their rural areas of birth (Friedl 1959). Rural community development in central Peru depends upon government aid as well as local self-help. The degree of achieved development often reflects, therefore, the relative degree of success which local migrants to the national capital achieve in obtaining government assistance via migrant organization into regional clubs acting as home-town lobbyists (Maynard 1964:40-41). Provincial voluntary associations in Lima constitute pressure groups obtaining and channeling aid back to the native provinces of members (Mangin 1959:27).

Transport Networks. Transient laborers and visitors move along established routes of transportation between city and countryside. Analysis of mechanical transportation networks can help to define the established rural hinterlands of given cities. Bus lines service networks define British hinterlands and their populations (Green 1950:67-69). Daily journeys to work and retail shopping and sales distribution areas tend to coincide with bus service areas (*ibid.*:74). Lack of parking space may reduce the number of hinterland shoppers, although shopping in private cars tends to extend the hinterland (Holford 1950:83). Simple size primacy of cities shows a negative rank correlation, however, with intensity of railway use, perhaps a function of small national areas which tend to support primary cities (in size) while larger countries allow more than one urban hinterland to develop (Mehta 1964:145).

Mass Media Communication. Television and radio transmitters, newspaper and magazine presses, and other such media operate in cities where an immediate market guarantees their economic basis, but their products spill over into rural areas. Thus, the means of diffusion of printed materials and the patterns of listening to radio broadcasts are significant determinants of the passage of concepts from urban-to-rural residents. In India, face-to-face discussion groups greatly reinforce radio messages attempting to convey technical information about farming (Neurath 1960). To the extent that mass media messages reach rural people, the

urbanites discussed tend to become a nonmembership reference group (Merton 1957:23) or model for behavior for rural listeners, viewers, or readers going through anticipatory socialization to urban norms (*ibid.*:265) to the extent that people in rural hinterlands can afford television and radio receivers, newspapers, magazines, books, etc. It is important for the designer of social change programs to learn the patterns of mass communications that influence either rural or urban populations, and frequently this requires some exploratory research.

An Institutional Inventory

Having reviewed above many analytical categories which previous investigators have found useful for understanding the processes of diffusion of urban conventional understandings to rural populations, we are ready to describe a method for analyzing and comparing settlements as they change in this way. Here we hark back to the Malinowskian concept of social institution and describe an analytical method couched in institutional units. We suggest that the objective comparison of settlements can be instructively carried out by counting discreet and fairly readily identified institutions.

Such an institutional analysis has already been achieved by us employing Peruvian data. The Cornell Peru Project undertook an evaluation of Peace Corps volunteer impacts in the Peruvian Andes between 1962 and 1964. In attempting to employ a measure of volunteer achievement independent of supervisor ratings or research staff ratings, we (Dobyns, Doughty & Holmberg 1965:18-26) devised an institutional inventory of Peruvian settlements. The specific inventory employed contained 100 institutional items. As used in that analysis, the inventory was concerned only with the question whether a given settlement possessed each of the inventory institutions in 1962 and 1964.

Thus, we were able to make a direct quantitative comparison between the settlements analyzed in 1962 and again in 1964. We were also able to make a direct comparison between the conditions in the same settlement in both years. This allowed us to measure the rate of institutional growth in settlements where volunteers worked compared to a sample of settlements where there were no volunteers. In this way we were able to conclude that volunteers had exercised a measurable influence on the institutional growth of those settlements to which they were assigned (Dobyns, Doughty & Holmberg 1965:228ff).

Since the volunteers whose influence was analyzed in the study just mentioned worked primarily in rural settlements, we needed to know only whether a given institution existed or did not exist in the settlements compared. We did not then exploit the inventory further by quantifying within institutional categories. Had we been concerned with cities rather than rural communities, we could have expanded the inventory by quantification in terms of each institution listed. This analytical method lends itself to such quantification. Further exploitation becomes a matter of enumerating accurately the number of institutions of each type in each settlement compared.

On the basis of our experience in utilizing the 100-institution inventory for the analysis of Peruvian data, we modified the list of most appropriate institutions somewhat for the present chapter. We recognized in devising the Peruvian inventory, moreover, that it was designed specifically for Peruvian conditions. In comparing settlements in Ecuador, Peru, and Bolivia, some modifications had to be made in the institutional inventory so as to keep the analytical categories comparable despite minor differences between these three adjacent central Andean nations.

In the institutional inventory presented here, we have gone one step farther toward developing the inventory into a method suitable for cross-national direct comparisons. We have rephrased the institutional descriptions to avoid too specifically Andean connotations, seeking to generalize sufficiently to fit the categories to at least Andean, Thai, and South Asian cultural realities. Thus, we are presenting so modified an inventory as to represent the state of refinement to date. The revised and generalized inventory has not yet been employed as a guide to collecting data for measurement of institutional growth in the various culture areas. We cannot, therefore, present very detailed examples of the utilization of the inventory, and we refer the interested reader to the report on Peace Corps volunteers in Peru for an example of its application in its original form.

TABLE 2. INVENTORY OF INSTITUTIONAL HETEROGENEITY

1. Autonomous settlement with recognized name (Young & Young 1960:262; Nash 1964:237; Young & Fujimoto 1965:347).

Governmental Structure

(Murdock et al. 1950:95)

2. National capital -- seat of congress or parliament, chief executive, and principal national appellate court (Murdock et al. 1950:98, 108).
3. Department capital -- seat of prefect. Equivalent of state in U. S. or Mexico (Redfield 1941:20).
4. Provincial capital -- seat of subprefect. Analog of county in U. S. (Murdock et al. 1950:96) District in Indonesia (Geertz 1956:137).
5. District capital -- seat of registrar of vital statistics, and the smallest official unit of national direct administration. Subdistrict in Indonesia (Geertz 1956:137). The principal administrative officer (alcalde in Peru) may or may not reside here. Mexico has only one administrative unit, the municipio, smaller than the state (Redfield 1941:20), like U. S. states with counties but without towns.
6. Police protection -- defined as a resident national policeman. In Peru, a resident member of the Guardia Civil, the national militarized police force. In the United States, a resident Federal Bureau of Investigation or Treasury Agent. (Redfield 1941:20; Murdock et al. 1950:94; Mumford 1938:266-267; Geertz 1956:136; Willner 1958:231; McWilliam 1963:57; Dobyns 1964:65; Cotler 1965:6; Young & Fujimoto 1965:347).
7. Government building other than those specified in the categories above, occupied by an active governmental organization, y.g., community headquarters, customs sheds, military or naval barracks, prisons. (Geertz 1956:137; Willner 1958:235; Young & Young 1960:262; Young & Young 1963:26; Dobyns 1964:58-59).
8. A public assistance and welfare agency (Murdock et al. 1950:119) called a "public charity society" in Peru, and endowed with land, often manors with serfs bound to them.

9. Community land ownership, e.g., parks, central square, streets, commons (Dobyns 1964:82-88 for productively used community land).
10. Municipal police force independent of national police (Dobyns, Doughty & Holmberg 1965:19, 308).

Educational Structure

(Murdock et al. 1950:101, 148).

11. Graduate level university instruction (Spiro 1963: 164-165; Comision Ejecutive Interministerial de Cooperacion Popular 1964:III:Anexo XVI).
12. Medical school (Redfield 1941:20).
13. University level instruction, including normal schools (Redfield 1941:20; Murdock et al. 1950:149; Dorich 1955; Willner 1958:229; McLoughlin 1964:162; McClelland 1966:273-277).
14. Secondary level instruction (Redfield 1941:20; Murdock et al. 1950:149; Dorich 1955; Geertz 1956:137; Young & Young 1960:262; Young & Young 1963:26; McClelland 1966:263-267).
15. Primary level instruction (Redfield 1941:35; Murdock et al. 1950:148; Mumford 1938:472-473; Dorich 1955; Young & Young 1963:26; Dobyns 1964:51-58; Young & Fujimoto 1965:347; Vazquez 1965a:154ff).
16. Literates -- one or more literate residents. In order to facilitate intersettlement comparisons, the percentage of literates in the total population should be recorded (Redfield 1941:24; Geertz 1956:137; 152; McLoughlin 1963:82; Hollerman 1964:148; Mattelart 1965: 21; Rogers & Herzog 1966:198-202).
17. Primary school graduates -- one or more residents (Arguedas 1953:110; Metraux 1959:241; Holmberg & Dobyns 1962:109; McLoughlin 1963:82; Dobyns 1964:51).
18. Secondary school graduates -- one or more residents. A percentage expression is desirable (Holmberg & Dobyns 1962:109; Ghersi & Dobyns 1963:156; McLoughlin 1963: 82).
19. University graduates -- one or more. Percentage expression desirable (Comision Ejecutiva Interministerial de Cooperacion Popular 1964:III:Anexo XVI).

20. Agricultural extension services (Dobyns 1951:29; Apodaca 1952:35ff; Sasaki & Adair 1952:104, 111; Dobyns 1952:210, 218-223; Singh 1952:59, 63; Geertz 1956:136; Holmberg 1958:14; Holmberg 1959:9; Sasaki 1960:19, 21, 30; McWilliams 1963:57).

Religious Structure

(Murdock et al. 1950:130; Adams & Havens 1966:215).

21. A major religious official in hierarchy and his temple. In a Roman Catholic country, seat of archbishop or cardinal (Jordan 1953:II).
22. A member or members of religious hierarchy with supervisory authority over lesser clergy, and corresponding temple. In a Roman Catholic country, diocesan seat with cathedral and resident bishop (Jordan 1953:II; Spitzer 1958:5).
23. Temple with resident full-time priest with authority over laity. In a Roman Catholic country, a parish headquarters with resident parish priest. In a Muslim nation, a mosque with specialized imam (Murdock et al. 1950:130; Young & Young 1960:262; McLoughlin 1963:76; Honigmann 1960:295; Young & Young 1963:26; Maynard 1964:vi; Young & Fujimoto 1965:347).
24. Temple without resident priest (Murdock et al. 1950:38; Dorich 1955; Young & Young 1963:26; Maynard 1964:vi).
25. Temple and congregation of dissenters. In a Roman Catholic country, a Protestant chapel and congregation. (Redfield 1941:34, 149; Murdock et al. 1950:38; Willems 1955:327ff; Honigmann 1960:294; Maynard 1964:vi). Each denomination active in the settlement should be recorded, with indication of congregational size.
26. Spiritualist congregation or practitioner (Redfield 1941:310, 317).
27. Religious lay voluntary associations that are permanent and formally organized, other than congregations (Murdock et al. 1950:82; Spitzer 1958:7).

Basic Community Services

28. Electricity -- electric power generating plant, public illumination, household services (Redfield 1941:19; Dorich 1955; Young & Young 1960:262; Young & Young 1963:26; Maynard 1964:vi; Dobyns 1964:69-71; Hollerman 1964:147; McLoughlin 1964:164; Mattelart 1965:56).
29. Market -- public marketing area, supervised, housed in public building (Redfield 1941:30; Young & Young 1960:262; Willner 1958:233; Geertz 1956:136; McLoughlin 1963:76; Maynard 1964:vi; Neale, Singh & Singh 1965:133).
30. Water supply, piped into public taps and/or houses (Murdock et al. 1950:32; Dorich 1955; Maynard 1964:vi; Dobyns 1964:67-69; McLoughlin 1964:64; Mattelart 1965:21).
31. Canal irrigation or flood control works (Dobyns 1964:90ff).
32. Public square -- improved, e.g., concrete walks, trees, shrubs, fountains (Redfield 1941:26; Murdock et al. 1950:41; Dorich 1955; Willner 1958:235; Young & Young 1963:26; Maynard 1964:vi; Young & Fujimoto 1965:347).
33. Paved or cobbled streets (Redfield 1941:28; Murdock et al. 1950:40; Dorich 1955).
34. Garbage collection and disposal (Holmberg 1950:370-371; Murdock et al. 1950:41; Dobyns 1964:66).
35. Swimming pool (Dorich 1955; Maynard 1964:vi).
36. Public school pupil-feeding program (Holmberg & Dobyns 1962:108).
37. Welfare program, e.g., Caritas del Peru (Murdock et al. 1950:119; Maynard 1964:vi).
38. Intracity bus, colectivo, or taxi service (Redfield 1941:29; Murdock et al. 1950:65; Cotler 1965:6; Young & Young 1960:26).
39. Sports field (Mumford 1938:429; Dorich 1955; Maynard 1964:vi; Dobyns 1964:59ff).
40. Cemetery (Murdock et al. 1950:123; Maynard 1964:vi).

41. Public library, or sectarian or private (Murdock et al. 1950:18, 101; Dorich 1955).
42. Museum -- public or private (Murdock et al. 1950:18, 75; Dorich 1955).

Communications

43. Airport and regular flights (Murdock et al. 1950:68; Dorich 1955; Anonymous 1962; McLoughlin 1963:75; McLoughlin 1964:164).
44. Railway with regular service (Redfield 1941:29; Murdock et al. 1950:66; Young & Young 1960:262; Geertz 1956:137; Willner 1958:234; Young & Young 1963:26; Hollerman 1964:147; Hunter 1965:83; Baer, Kerstenetzky & Simonsen 1965:190-192).
45. Highway -- a vehicular road that is passable (Redfield 1941:38; Murdock et al. 1950:65-66; Green 1950; Dorich 1955; Siegel 1957:246-247; Willner 1958:234; Dobyns 1964:60-63; Honigmann 1960:298).
46. Post Office (Redfield 1941:37; Murdock et al. 1950:16; Maynard 1964:vi; Young & Fujimoto 1965:347).
47. Telegraphic service (Redfield 1941:34; Murdock et al. 1950:16; Maynard 1964:vi; Young & Fujimoto 1965:347).
48. Telephonic service (Murdock et al. 1950:16; Young & Young 1963:26; Maynard 1964:vi; Young & Young 1960:262).
49. Interprovincial tramp truck service or scheduled truckers (Murdock et al. 1950:65; Geertz 1956:136; Hunter 1965:71ff).
50. Interprovincial bus service (Murdock et al. 1950:65; Green 1950; Geertz 1956:136; Young & Young 1963:26; Maynard 1964:vi).

Health Services

51. Medical service -- settlement receives regular visits by doctor (Redfield 1941:312; Maynard 1964:vi).
52. Resident physician (Redfield 1941:21; Murdock et al. 1950:122; Dorich 1955; Young & Young 1960:262; Young & Young 1963:26; Hollerman 1964:148; Honigmann 1960:297; Siegel 1957:247; Young & Fujimoto 1965:347).
Preferably expressed as the number per 1,000 inhabitants.

53. Hospital (Murdock et al. 1950:118; Dorich 1955; Geertz 1956:136; Willner 1958:235). The number of beds should be recorded.
54. Resident nurse(s), preferably expressed in number per 1,000 inhabitants (Murdock et al. 1950:122).
55. Medical post (Dorich 1955; Maynard 1964:vi; Dobyns 1964:66).
56. Sewage Disposal System (Dorich 1955).

Mass Media

57. Daily newspaper published in settlement (Redfield 1941:24; Murdock et al. 1950:16; Dorich 1955; Carter & Sepulveda 1964:217).
58. Weekly newspaper locally published (Dobyns, Doughty & Holmberg 1965:21, 309).
59. Weekly, bimonthly, or monthly magazines published locally (Redfield 1941:34; Murdock et al. 1950:16; Willner 1958:229; Carter & Sepulveda 1964:217).
60. Radio station (Murdock et al. 1950:16; Willner 1958:230; Neurath 1960:674; Neurath 1962:279-283; Deutschman 1963:29; Young & Young 1960:262; McNelly & Fonseca 1964:227; Rogers 1966:619; Carter & Sepulveda 1964:218).
61. Television station (Murdock et al. 1950:16; Glaser 1965:83; Young & Young 1960:262; De Fleur 1964:73; McNelly & Fonseca 1964:227; Rogers 1966:619).
62. Book publishing industry (Murdock et al. 1950:17; Willner 1958:231; Deutschman 1963:29-34; McNelly & Fonseca 1964:227; Carter & Sepulveda 1964:221).
63. Newspaper reading -- metropolitan newspapers delivered and read regularly (Redfield 1941:37; Deutschman 1963:29-34; McNelly & Fonseca 1964:227; Hollerman 1964:147; Glaser 1965:83-85; Rogers 1966:618-619).

Credit Structure

64. Banking institutions -- main offices, branches, agencies (Redfield 1941:19; Murdock et al. 1950:58; Dorich 1955; McLoughlin 1963:75; McLoughlin 1964:162; Hensley 1964:396, 401-415; Adams & Havens 1966:215).
65. Credit unions, including housing cooperatives, loan associations and finance companies (Murdock et al. 1950:58; Willner 1958:236; Geertz 1962:243ff; Moore 1953:144-153; Anderson 1966:335ff).
66. Moneylenders -- full-time occupation (Dobyns, Doughty & Holmberg 1965:79; Lambert 1964:418; Moore 1953:142-144), including pawnshops (Swift 1957:327).

Industrial Structure

(Wilson & Wilson 1945:83).

67. Construction industry with specialized skills, e.g., mason, tile factory (Redfield 1941:20, 38; Murdock et al. 1950:36-37; Mattelart 1965:56).
68. Processing industry, powered by non-animal sources, e.g., soda water, mineral water, canneries, breweries, cordage mills, match factories, vegetable oil mills, soap factories, furniture factories (Redfield 1941:12, 30; Geertz 1956:136, 143; Honigmann 1960:295; McLoughlin 1963:75).
69. Clothing industry, e.g., textiles, shoes, hats (Murdock et al. 1950:30; Willner 1958:235).
70. Metallurgical industry -- extraction, processing, manufacture, e.g., railway shops, machine manufacture (Redfield 1941:19; Murdock et al. 1950:34-35; Siegel 1957:246; Matos 1963:73; McLoughlin 1963:75).
71. Pharmaceutical industry (Murdock et al. 1950:27).
72. Chemical industry, e.g., caustic soda (Dobyns, Doughty & Holmberg 1965:22, 310).
73. Organized labor union (Murdock et al. 1950:59; Wipper 1964:37; Trachtman 1962:199-200; Willner 1958:240).

Commercial Recreation

74. Moving picture theater (Redfield 1941:29; Murdock et al. 1950:76; Dorich 1955; Deutschman 1963:29-34; Willner 1958:230; McLoughlin 1964:163; McNelly & Fonseca 1964:227; Young & Fujimoto 1965:347).
75. Legitimate theater (Redfield 1941:21; Murdock et al. 1950:76; Geertz 1956:136; Willner 1958:234).
76. Concert band or orchestra, professional full-time musicians playing European instruments (Cotler 1965:6).
77. Stadium, including bull-baiting rings (Murdock et al. 1950:75; Maynard 1964:vi).
78. Indoor recreation, e.g., billiards, bowling alleys, shooting galleries, skating rinks, gymnasiums, cockpits, (Mumford 1938:266; Redfield 1941:41; Murdock et al. 1950:72, 76; Dorich 1955:2; Young & Fujimoto 1965:347).
79. Brothels (Murdock et al. 1950:74; McLoughlin 1964:163).

Commercial Differentiation

80. Fair held regularly (Valcarcel 1964; Maynard 1964:vi; Neale, Singh & Singh 1965:133ff).
81. General retail stores (Redfield 1941:19; Murdock et al. 1950:57; Swift 1957:33).
82. Specialized stores: wholesalers (Redfield 1941:19; Murdock et al. 1950:56; Geertz 1956:143).
83. Specialized stores: groceries (Murdock et al. 1950:57).
84. Specialized stores: meat market or butchering place (Young & Fujimoto 1965:347).
85. Specialized stores: clothing, e.g., hat, shoe, tailor, underwear, tie (Murdock et al. 1950:30, 57; Willner 1958:230-233; McLoughlin 1964:168; Geertz 1956:150).
86. Specialized stores: department (Redfield 1941:19; Murdock et al. 1950:57).

87. Specialized stores: pharmacies (Redfield 1941:30; Murdock et al. 1950:57; Dorich 1955; Geertz 1956:136).
88. Specialized stores: hardware (Dobyns, Doughty & Holmberg 1965:22, 310; Geertz 1956:136).
89. Specialized stores: bicycles (Geertz 1956:136; Willner 1958:234), including tricycles (dual front wheels supporting cargo-carrying platform) & pedal rickshaws.
90. Specialized stores: garage, gasoline station (Redfield 1941:30; Murdock et al. 1950:57; Young & Fujimoto 1965:347).
91. Specialized stores: automobile dealer (Redfield 1941:19; Willner 1958:229).
92. Specialized stores: glass, e.g., plate, window, picture, and glasswares (Dobyns, Doughty & Holmberg 1965:22, 310; Willner 1958:231).
93. Specialized stores: book or magazine (Cotler 1965:6).
94. Specialized stores: home appliances, e.g., radio, sewing machine, refrigerator, stove, record player (Dobyns, Doughty & Holmberg 1965:22, 310; Geertz 1956:136).
95. Specialized stores: agricultural supplies, e.g., seed, fertilizer, implements, tractors (Dobyns, Doughty & Holmberg 1965:23, 310; Singh 1952:57).
96. Specialized stores: photographic (Murdock et al. 1950:18).
97. Specialized stores: bakeries (Geertz 1956:136; Young & Fujimoto 1965:347).
98. Specialized stores: phonograph records and tapes.
99. Specialized services: insurance (Redfield 1941:19; Murdock et al. 1950:59).
100. Specialized services: undertaking (Murdock et al. 1950:124).
101. Specialized services: barbers (Murdock et al. 1950:31; Honigmann 1960:295; McLoughlin 1964:163; Young & Fujimoto 1965:347).
102. Specialized services: beauticians (Redfield 1941:35).

103. Specialized services: hotels including inns and pensions (Redfield 1941:19; Murdock et al. 1950:64; Dorich 1955; McLoughlin 1964:163; Young & Fujimoto 1965:347).
104. Specialized services: restaurants, including ice cream parlors (Murdock et al. 1950:25; Geertz 1956:150; McLoughlin 1964:163).
105. Specialized services: bars, taverns and other establishments purveying alcoholic beverages (Siegel 1957:252; McLoughlin 1964:168; Young & Fujimoto 1965:347; Richards 1964).
106. Locally owned trucks and other motor vehicles (Holmberg 1950:415-416; Geertz 1956:136, 150; Swift 1957:334; Hollerman 1964:149).
107. Cooperative, either producers' or consumers' (Murdock et al. 1950:62; Taylor, Ensminger, Johnson & Joyce 1965:297ff).
108. Skilled commercial handicraft production (Dobyns, Doughty & Holmberg 1965:23, 310; Herman 1956:356ff; Geertz 1956:137; Willner 1958:235; McLoughlin 1964:162).
- Other
109. Settlement a target of migration (Mumford 1938:147-148; Redfield 1941:23; Dobyns 1963:20; Ghersi & Dobyns 1963:154; Andrews 1963:146; Soler 1963:82ff; McLoughlin 1963:71).
110. Cosmopolitanism, e.g., foreign colony or colonies (Redfield 1941:23; Harris 1945; Geertz 1956:136; Siegel 1957:245; Willner 1958:235; McLoughlin 1963:71, 77; Bradfield 1965:63-64).
111. Social clubs, purely local in nature, e.g., country club (Redfield 1941:34; Dorich 1955; Siegel 1957:252; Mangin 1959).
112. Social clubs -- multi-settlement, e.g., Masons, Rotary Lions, Sertoma (Redfield 1941:35).
113. Sports clubs (Murdock et al. 1950:72; Willner 1958:229, 240).
114. Political party organization (Murdock et al. 1950:98; Willner 1958:235-238; Eisenstadt 1957:306-307).

While our institutional inventory does seem to compare the degree of heterogeneity achieved by different settlements, it is clearly not the only method for measuring such phenomena. Other analysts have formulated somewhat parallel lists of institutions and characteristics to differentiate between settlements. Methodologically speaking, probably the most significant efforts have been those seeking to identify those settlement characteristics functionally related to one another in the unidimensional development process, as verified by the Guttman scaling technique. An example of this type of analysis compared the distribution of fourteen institutional traits forming a Guttman scale with a coefficient of reproducibility of .98. The scale components, from least to most complex, are:

1. Named, autonomous settlement (a threshold item)
2. Some sort of official designated by government
3. At least one organization
4. A church
5. A school structure
6. A school in operation
7. Access to railway
8. Electricity
9. A railway station
10. At least four grades of school
11. A public square
12. A medical doctor
13. One or more telephones
14. Radios in the possession of at least 40 percent of the population
15. A secondary school.

These traits correlate with the size of the population as well as the physical size of the settlement and its distance from a primate city (Young & Young 1960:261-262).

A sample of fifty-four settlements in twelve Latin American nations has also been compared in terms of a similar Guttman scale with a coefficient of reproducibility of .82. The characteristics entering into the scale are, in order of ascending complexity:

1. Name and autonomy
2. Elementary school
3. Public square
4. At least one government organization
5. Bar
6. Bakery
7. Barber shop
8. Butcher shop
9. Resident priest
10. Hotel or similar establishment
11. Commercial recreation establishment
12. Resident medical doctor

13. Moving picture theater
14. Gasoline station

This scale measures, again, cumulative institutional differentiation (Young & Fujimoto 1965:345-347).

The data required for analysis of settlement heterogeneity using either of the latter Guttman scales can be obtained from the longer institutional inventory. We feel that it is wise to collect the data required for the longer institutional list, so as to have adequate information at hand to experiment with alternative Guttman scales during analysis and comparison.

IV. CONTEXTUAL MAPPING OF CULTURAL CHANGE

Some years ago, Allan R. Holmberg published a short statement concerning a "contextual mapping" method for analyzing the modernization process as a particular case of cultural change. In that preliminary paper, he stressed the scientific implications of taking a "research and development approach to the study of change." He emphasized that Vicos, the Andean estate in Peru which he and his colleagues were studying, permitted working "in a complete cultural context." At Vicos, "it was possible to specify social goals for almost all aspects of culture, and...for the anthropologist to maintain some control over the interventions and variables involved." This allowed for testing hypotheses "by comparing actual goal achievement with predicted goal achievement."

Holmberg stressed the importance of such a procedure in the natural sciences. Scientific discoveries are eventually put to the test of success or failure in engineering attempts to apply research findings. Thus, a great strength of the natural sciences is "feedback through development" according to Holmberg.

He contrasted the situation of the natural sciences with that in the behavioral sciences which profit little "from such corrective feedback."

Holmberg pointed out that one reason the behavioral sciences had benefitted little from corrective feedback was that their findings had seldom been systematically employed for making social decisions. If behavioral science findings had been taken into account in decision-making, the results had not been fed back to the scientist, or at any rate not swiftly enough to lead to any rapid advances in the behavioral sciences. "Research and development work in behavioral science are seldom joined...for the systematic exploitation of their reciprocal benefits, as they are in the research and development laboratories of the natural sciences."

Holmberg asserted that scientific advances in anthropology required policy "even if policy does not need science." At the same time, it may be asserted with equal justification that policy does require the findings of behavioral science, at least under forms of government such as representative democracy. Harold D. Lasswell has recently been emphasizing the necessity for behavioral science data and

findings by referring to a group of "policy sciences." That policy-makers stand in need of behavioral science research guidance may be seen clearly in the frequency with which they fail to achieve stated and earnestly sought goals.

One of the reasons for conducting behavioral science research to guide policy-making may be discerned in one of the firmest of behavioral science findings to date. This is the human "pliancy factor" as Holmberg called it, borrowing the term from Max Black. By this is meant the human propensity for altering behavior in such a way or ways as to challenge any scientific generalization on behavior communicated to the subjects of research.

It is vitally important to remember that this pliancy factor operates not only when scientific generalizations are communicated to people, but in many cases when policy decisions are communicated to them. To cite an overworked and widely known example, in 1948 the voters of the United States elected Harry S. Truman President after public opinion polls based on interviewing national samples of voters predicted that Thomas E. Dewey would be elected. One variable the polls could not successfully predict was the pliancy factor. Voters informed of the poll predictions apparently changed their behavior in enough cases to alter the outcome. Confident Republicans failed to go to the polls in the numbers the predictions assumed, while desperate Democrats turned out the maximum possible number of voters.

This pliancy factor is often encountered by the U. S. Agency for International Development and other overseas agency employees in the field of United States foreign assistance.

The pliancy factor may be regarded as an advantage rather than a liability. Holmberg pointed out that behavioral scientists have generally viewed it as a cross to be borne. He maintained, however, that "a generalization about behavior is not falsified when predictions based upon it are made obsolete when the subject to whom it is made known prefers to modify himself rather than to conform to an earlier prediction." The possibility of this kind of behavioral modification "must be taken into account and turned to scientific advantage," according to Holmberg, who saw this as "one of the great advantages of the research and development approach." In other words, Holmberg (1958: 14) insisted that "in the continuous interplay between scientific generalization and goal-seeking behavior, the insight-feedback of a scientific generalization can be employed both for goal revision and as empirical data for research."

Here lies the great potential of behavioral science research for policy-making, in its capacity for supplying data for continuous goal revision as social circumstances warrant and even require such revision.

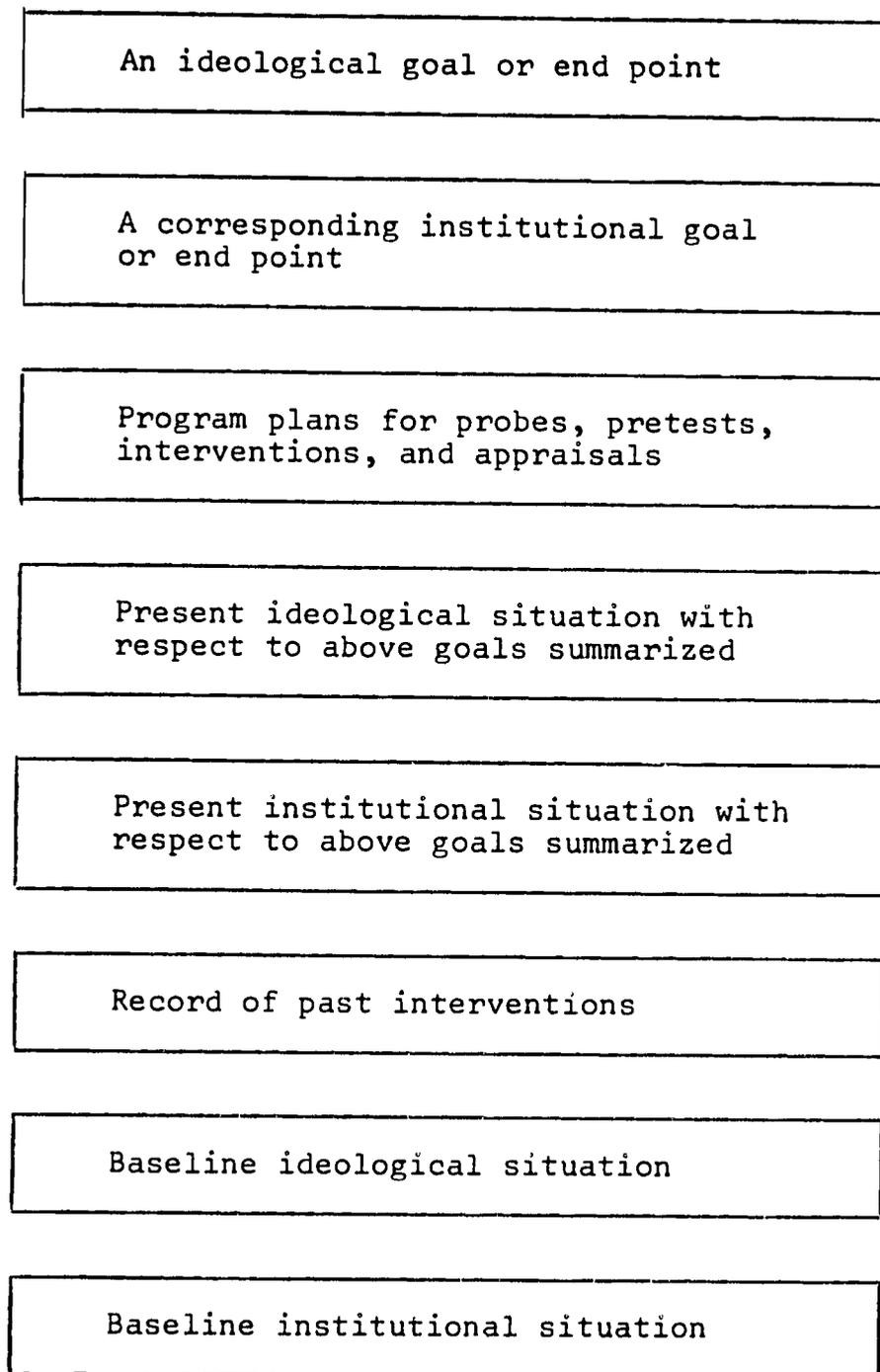
"The essence of the connection between research and development...is that each developmental intervention... is both a necessary step towards reaching community goals and in the research sense a method of varying the group situation to isolate another variable in group dynamics..." as Holmberg (1958:15) put it.

In discussing these concepts, Holmberg indicated that he and several colleagues had attempted to develop techniques for realistic research analysis of goals and policy decisions and their consequences as these changed through time in the Vicos context. They laid out some 130 "specific possible lines of research and development, each matched to a specific developmental goal..." Holmberg provided in his original discussion only illustrative examples of these lines, such as the "diversification of agriculture, the development of community leadership, the reduction of social distance between Indians and Mestizos, the increase of educational opportunities for both children and adults, etc."

In describing the physical procedure employed, Holmberg indicated succinctly that "in order subsequently to develop a strategy of research and development, each line of possible intervention was represented in a semi-diagrammatic way by a column on a very large bulletin or map board taking up the walls of a room." The lines on the board consisted of 3 x 5 inch cards that were used "to lay out . . . visually the research and development sequences, subject to constant revision as research and development continues."

Holmberg (1958:16) noted that some end-point data for the particular goal was posted at the top of each column. At the bottom of the column appeared the "counterpart institutional and ideological situations found at the baseline period before interventions." In between the analysts "summarized any interventions so far made, and above them the present institutional and ideological situation with respect to this one line of development." Included in the remaining space within the column were "a proposed schedule of probes, pretests, interventions, and appraisals." These column contents were summarized by Holmberg in a column of boxes as shown in Chart 4.

Chart 4. HOLMBERGIAN CONTEXTUAL MAP COLUMN PLAN.



One purpose of the present monograph is to expand upon the brief description of the "contextual mapping" method for analyzing development process and progress, as it has been employed by the staff of the Comparative Studies of Cultural Change.

Rates of Change

One of the most important considerations in planning development is a realistic appraisal of the expectable rates of modernization under different national conditions. One form of contextual mapping that yields crucial information upon which to base policy decisions designed to maximize rates of modernization is that which incorporates a temporal dimension.

The systematic analysis of developmental inputs and progress during a given period of time reveals what inputs bring about fast-paced development, what inputs result in slower development, and what inputs bring about no perceptible development at all. This sort of analysis illuminates the relationships between cultural factors that profoundly affect scheduling developmental efforts. For it happens that another firm finding of behavioral science is that the temporal sequence of efforts toward changing a given population affects the outcomes of those efforts. For example, economists tend to insist upon the priority of providing infrastructures for socio-economic development and to advise policy-makers to build trunk highways and farm-market access roads in order to permit rural producers to enter the cash economy, contribute their surplus production to the urban market, and so on. This general policy is supported by our data from the central Andes, where farm-market access road construction across the arid, and often sterile, expanses of much of this mountain chain is a bright key to socio-economic development of rural settlements, to geographic mobility, and to national social, economic, and political integration (Alers Montalvo 1960; Andrews 1963; Arguedas 1956; Cotler 1959; Dobyms 1964; Holmberg 1950; Stein 1957; Tschopik 1947). This general policy is also supported by the data from Thailand, where canal and road construction into the wilderness during the last century opened the way to land settlement and the formation of commercial rice-growing communities such as Bang Chan.

Our data from India do not, however, support the generalization that farm-market access road construction liberates rural energies, expands the general economy, and leads to development. The data disclose that the cultural situation in rural India is such that factors come into play that are not operative in Thailand or the central Andes and that alter the priorities of developmental scheduling. The fact of the matter is that the road infrastructure has existed for a very long time in parts of rural India without producing the development expected in terms of experience in other parts of the world.

Epstein (1962) has commented upon the tendency of villagers to claim street sections adjacent to their homes and compounds as parking space for their carts and as drying areas for their agricultural produce. The Cornell staff studying Senapur witnessed numerous cases of householder and farmer aggression against the public thoroughfares. Field boundaries gradually crept farther and farther into rights of way until the paths were obstructed or until litigation to reopen them ensued.

After Indian independence, when land reform measures were instituted, land consolidation programs began to take effect in the Senapur area, and access roadways began to open up as field boundaries were investigated, titles were examined and legalized, and some forms of surreptitious pressure on the land base were eased.

This Indian experience showed that under the conditions of human pressure on the land existing in the Gangetic plain and other parts of the subcontinent, road-building was not a sufficient measure to bring about rural development. In fact, road-building prior to land reform was not even properly scheduled to promote rural development. In this instance, under conditions prevailing on the subcontinent, apparently a socio-legal measure, land reform, was properly scheduled before road-building if rapid rural development were desired. For without land reform measures to relieve peasant pressure on the rights of way, the roads built for developmental purposes hardly survived.

This example, although presented in narrative form, rather than in the tabular form of contextual mapping, makes the point of the utility of analysis that points to those development efforts that can be identified as producing no or very slow change in the status quo. When such analysis is carried out systematically, as Holmberg (1958:16) pointed out, "interventions are not likely to be hit or miss and their developmental and research gains can be fully appreciated." This temporal dimension of contextual mapping was implied in his insistence that scheduling interventions "requires the careful appraisal of the facts describing the existing situation and trends, probes of readiness of the community to take the proposed step, pretests of interventions on a small scale, then the intervention itself and subsequent appraisal."

The temporal unit employed for contextual mapping will depend upon the goals of the analyst and the degree of refinement in temporal definition he finds that he requires. Data-recording for certain types of behavioral science observations is in minutes or even seconds when dealing

with small group interactions. On the other hand, the holistic cultural context of a viable human community such as Vicos appears to require relatively long time units. Thus far, the calendar year has been employed in contextual mapping of the developmental process at Vicos.

It is well to keep in mind, however, that decades and even centuries at times become relevant units of temporal measurement. In assessing the results of Spanish, Mexican, and United States efforts to obliterate the autochthonous cultures of tribesmen in the southwestern portion of the North American continent, Spicer (1962) analyzed the progress of cultural change over the period from 1533 to 1960, a period of just over four centuries.

In terms of actual contextual mapping procedure, the 3 x 5 inch card has thus far been a basic element. It has been supplemented by photographic prints of slightly smaller size to permit typing or writing a brief comment on a 3 x 5 inch card to which the print may be attached. There is, it should be stated, no essential reason other than convenience for employing 3 x 5 inch cards.

The second physical requirement for contextual mapping is a large expanse of clear wall space where the cards can be affixed. The Comparative Studies of Cultural Change quarters at Cornell University include one contextual mapping wall which provides 192 square feet of surface. It is, in other words, sixteen feet wide by twelve feet high, and even so is insufficient for full exploitation of the method. This wall space proves useful also for handling large-scale topographical or cultural feature maps from the field when no contextual map is up.

In practical terms, the composition of the wall itself is of relatively little importance. The Cornell contextual mapping space consists of ordinary 4 x 8 foot wall boards surfaced with several coats of rapid-drying metallic paint (covered with a decorator color) that provide a base for magnetic adhesion. Magnetic strips of plastic with an adhesive compound on one surface are employed to affix cards and photographs to the wall. This allows placement of a card at any point on the wall surface without damage to the wall itself. Cards held in place by magnetic force can be moved much more rapidly than cards tacked into place, in the continual analytical rearrangement of information units that takes place during the actual contextual mapping and analysis operation.

In setting up wall space for contextual mapping in temporal dimension, our practice has been to prepare two sets of cards bearing year dates. One set is placed along

the right hand margin of the space to be used for analysis, and the other set along the left hand margin. We have arranged these cards so that time is expressed vertically from bottom to top of wall space, the earliest date toward the bottom and the latest date toward the top. Perhaps we have been influenced by conventions of drawing up archeological and fossil man charts, which generally employ this same convention.

Actually, there is no inherent physical reason for expressing the temporal progression from bottom to top, nor indeed for expressing the temporal dimension vertically. It is equally feasible to express time horizontally and to arrange temporal progression from either left to right, as the English language is read, or from right to left.

The use of dual labels at both edges of the contextual map space simply facilitates reading the information by providing two points of temporal reference.

This form of organization of the contextual map was implied in Holmberg's short article in his comparison of Vicos conditions in 1952 and 1957 in seven spheres of developmental activity (Holmberg 1958:13). The presentation of that comparison in a narrative text perhaps disguised the nature of the contextual map, so we have recast his comparison in contextual map form in Chart 5.

Chart 5. DIACHRONIC COMPARISON OF THE VICOS SITUATION

Date	Organization	Land Ownership	Local Authority
1957	<p>Hacienda system and free services have been abolished; new system of community organization now operating is based on shared interests and local control.</p>	<p>Based on reports of development by the Cornell Peru Project, the Institute of Indigenous Affairs asked the Peruvian Government to expropriate Vicos in favor of its indigenous population. This expropriation has now taken place.</p>	<p>The Vicosinos have organized a board of their own delegates elected from each of 6 zones of the hacienda. They have the legal responsibility for the direction of community affairs.</p>
1952	<p>Vicos had an hacienda-type organization. Outside renters had free use not only of hacienda peones for labor and personal services, but also of their animals and tools. Power was concentrated in the hands of the patron.</p>	<p>No title to land, although Vicosinos had tried on numerous occasions to purchase the land on which they had been living as peones for 400 years.</p>	<p>Under the hacienda-type organization there were no responsible secular authorities within the community.</p>

Chart 5. DIACHRONIC COMPARISON OF THE VICOS SITUATION (CONT'D)

Date	Income	Education	Production	Health Facilities
1957	Former <u>hacienda</u> lands are now farmed for the public good, providing a steady income for the payment of lands and the development of public service.	Vicos now possesses the most modern school in the whole region, recently made a <u>nucleo escolar</u> , with a capacity of 400 students. There are now 9 teachers and about 200 students, many of whom have had five years of continuity.	Each <u>hectare</u> of potato land is now producing a value of \$400-\$600 (in 1957 dollars).	A modern health center has been built by the Vicosinos and a neighboring community; a clinic is held twice a week and a public health program is underway.
1952	The indigenous community of Vicos had no source of income of its own.	In the aspect of education Vicos had a very small school, with one teacher, 10-15 students.	Low economic production—each <u>hectare</u> of potato land produced a value of only \$100.	There were no modern health facilities.

The simulation of contextual mapping just presented is extremely abbreviated and still does not express anything approaching the full complexity of a full-scale analysis. The next step in clarifying the contextual mapping operation is to indicate what a single vertical column (in terms of the Comparative Studies of Cultural Change space utilization convention) looks like, and at least a few of its functions. This is exemplified in Chart 6.

First, Holmberg's 1952-1957 comparison was realistic except in dropping out, for purposes of publication, the descriptions of the intervening years 1953, 1954, 1955, and 1956. The Cornell Peru Project as originally constituted by Cornell University and the Peruvian Indian Institute was set up for five years. Thus, the first attempt to develop a specific contextual map to guide key developmental interventions at Vicos required the consideration of five years only. The baseline description of Vicos, published in Spanish in 1952 (Vázquez 1952), referred to conditions during the period 1949-1950 when the field studies were actually carried out. The value and institutional goals stated were originally placed at the 1957 time level, inasmuch as that was the temporal limit for the program at the time it began. Its temporal extension was fairly comparable, therefore, to the vast majority of government planning endeavors that are viewed as "long-range plans" in political terms.

In actual fact, of course, what is a "long-range plan" for politicians is generally a very short-range plan in terms of development velocities in unevenly developed nations.

As a result of factors such as the striking success of the Cornell Peru Project staff in producing marked changes in the economic productivity and attitudes of the Indians of Vicos, the organization was extended for a second five-year period from 1956 to 1961. This doubled the temporal dimension of the contextual mapping analysis concerned with Vicos and meant establishing new goals for 1961.

Then, a third five-year extension occurred in 1961 carrying the Cornell Peru Project to 1966, and this added yet another five-year period to the contextual map's time perspective. The analysis of the cultural change process in Vicos cannot end with the termination of the Cornell Peru Project with Holmberg's death in 1966. As an eminent behavioral scientist remarked during a discussion of the community development process during Cornell University's Latin American Year, scientific observation of the Vicos community ought to continue for at least another twenty

Chart 6. A SAMPLE COLUMN SHOWING THE FIRST FIVE-YEAR PERIOD OF CORNELL PERU PROJECT INTERVENTION AT VICOS, PERU, AS SUMMARIZED AFTER THE PERIOD ENDED

Date	Organization	Date
1957	<p>Manorial system and free services have been abolished. A new system of community organization now underway is based on shared interests and local control.</p> <p>A central government land expropriation decree, issued late in 1956, gives ex-serfs <u>de facto</u> recognition (See law).</p>	1957
1956	<p>First local council of zone delegates is elected. This process consists of nomination in open meetings with selection by popular acclamation. Indian serfs on the eve of liberation elect men who are younger than the traditional socio-religious authorities of the manorial system and who are identified with the Cornell Peru Project.</p>	1956
1955	<p>Cornell Peru Project staff continue to encourage assembly discussion at the <u>mando</u> and <u>mayoral</u> participation in management decisions, with increasing devolution of power.</p>	1955
1954	<p><u>Mayorales</u> are increased to seven; training seminars and assembly discussions continue.</p>	1954
1953	<p>Training seminars and assembly discussions continue.</p>	1953

Chart 6. A SAMPLE COLUMN SHOWING THE FIRST FIVE-YEAR PERIOD OF CORNELL PERU PROJECT INTERVENTION AT VICOS, PERU, AS SUMMARIZED AFTER THE PERIOD ENDED (CONT'D)

Date	Organization	Date
1952	Holmberg institutes weekly seminars for Indian foremen (<u>mayorales</u>) inherited from the manorial system, drawing them into discussion of manorial policy and gradually increased decision-making. Serf discussions of decisions are encouraged at weekly labor shape-up (<u>mando</u>).	1952
1951	Vicos has a manorial management; overseers and foremen (Mestizos) with Indian straw bosses.	1951

years in order to wring maximum factual and theoretical benefit out of the potentially available information about the consequences of the various interventions there.

Thus, a contextual map covering the period from the beginning of the baseline study in 1949 to the goal date of 1986 could be drawn up, as in Chart 7. In another perspective, the long relatively stable past of the Vicos population could be extended back before the anthropological baseline study.

Chart 7. A SAMPLE CONTEXTUAL MAP COLUMN SHOWING TEMPORAL PERSPECTIVE OF THE VICOS SITUATION FROM INITIATION OF THE CORNELL PERU PROJECT TO THE PRESENTLY EXPECTABLE GOAL DATE

Date	Organization	Date
1986	Alternative goals will be: 1) government-recognized cooperative 2) private ownership of all lands.	1986
1985		1985

Chart 7. A SAMPLE CONTEXTUAL MAP COLUMN SHOWING TEMPORAL PERSPECTIVE OF THE VICOS SITUATION FROM INITIATION OF THE CORNELL PERU PROJECT TO THE PRESENTLY EXPECTABLE GOAL DATE (CONT'D)

Date	Organization	Date
1984	Decision on land tenure relative to taxation will be made.	1984
1983	This is the predicted date of payment of last annual installment of government land purchase loan.	1983
1982		1982
1981		1981
1980	Council should contain normal school graduates.	1980
1979		1979
1978		1978
1977		1977
1976		1976
1975	Feasible goal: ten percent of the population will be qualified voters in national election; Vicos candidates will be elected at the provincial level.	1975
1974		1974
1973		1973

Chart 7. A SAMPLE CONTEXTUAL MAP COLUMN SHOWING TEMPORAL PERSPECTIVE OF THE VICOS SITUATION FROM INITIATION OF THE CORNELL PERU PROJECT TO THE PRESENTLY EXPECTABLE GOAL DATE (CONT'D)

Date	Organization	Date
1972	Council should include secondary school graduates.	1972
1971		1971
1970		1970
1969	Feasible goal: five percent of the population is expected to be qualified voters in national election; Vicos candidates may be expected to be elected at district level.	1969
1968		1968
1967		1967
1966	Council consists of men in their twenties with some primary education in Vicos; they are in rebellion against experienced elders with far more practical experience. Final mortgage payment is made to the Public Charity Society of Huaraz, former owner.	1966
1965	Council consists of young, primary-school-educated men.	1965
1964	Public assembly expels Peace Corps volunteers.	1964

Chart 7. A SAMPLE CONTEXTUAL MAP COLUMN SHOWING TEMPORAL PERSPECTIVE OF THE VICOS SITUATION FROM INITIATION OF THE CORNELL PERU PROJECT TO THE PRESENTLY EXPECTABLE GOAL DATE (CONT'D)

Date	Organization	Date
1963	Ninety-five percent of family heads participate in community council elections.	1963
1962	Land purchase agreement is reached and down payment is tendered. One percent of the population are qualified voters.	1962
1961	Badges of office are introduced for councilmen. Sociedad de Beneficencia Publica de Huaraz threatens to resume control of manor.	1961
1960	Secret balloting with colored cardboard takes place. Second expropriation decree expires.	1960
1959		1959
1958	Councilmen are not participants in Mestizo culture. Second expropriation decree is issued (the first lapsed without taking effect).	1958
1957	Manorial system is abolished; <u>de facto</u> control is passed to hands of <u>ex-serf</u> councilmen.	1957
1956	First council is elected by zone acclamation. First expropriation decree is issued by Ministry of Labor and Indian Affairs.	1956

Chart 7. A SAMPLE CONTEXTUAL MAP COLUMN SHOWING TEMPORAL PERSPECTIVE OF THE VICOS SITUATION FROM INITIATION OF THE CORNELL PERU PROJECT TO THE PRESENTLY EXPECTABLE GOAL DATE (CONT'D)

Date	Organization	Date
1955	Training seminars and assemblies continue.	1955
1954	Seminars and assemblies continue.	1954
1953	Seminars and assemblies continue.	1953
1952	Holmberg initiates weekly seminar to train Indian foremen in orderly meeting conduct, management discussion; open labor shapeup discussion of management decisions begins.	1952

V. CONTEXTUAL MAPPING OF COMPARATIVE INSTITUTIONAL CHANGE

In this chapter we shall combine the contextual mapping technique for analyzing cultural change with the institutional approach to such analysis. Our goal will be to illustrate the utility of the contextual mapping method for assessing relative influences upon the change process achieved by different institutions. In order to do this, we shall present an abbreviated summary of what has happened to the Indian inhabitants of Vicos since 1952.

The physical set-up of the particular contextual map employed for the analysis presented in this chapter is depicted in Chart 8. The Cornell Peru Project's more direct influences upon Vicos will be summarized on lines one through five in each value category column. Then certain key Vicos community actions will be summarized on lines six through eight. Key influences of the Peruvian Ministry of Public Education will be summarized on lines nine through thirteen, followed by the Peruvian army on line fourteen, UNICEF on line fifteen, and the Peruvian Agricultural Development Bank on line sixteen.

In Chart 8, the eight value categories are represented across the top with the letters "A" through "H" as follows:

- A = Power
- B = Respect
- C = Rectitude
- D = Affection
- E = Well-Being
- F = Wealth
- G = Skill
- H = Enlightenment

For a fuller explanation and justification of these eight value categories, see Appendix A.

The Cornell Peru Project

Power

A-1. Vicos Council Training. The Cornell Peru Project staff directly devolved its patronal powers upon Vicos Indians as rapidly as possible. It combined its deliberate devolution of power of decision-making with a planned program of leadership training. The scientific staff studying Vicos and nearby settlements met each Monday for a seminar on current findings. Then each Tuesday

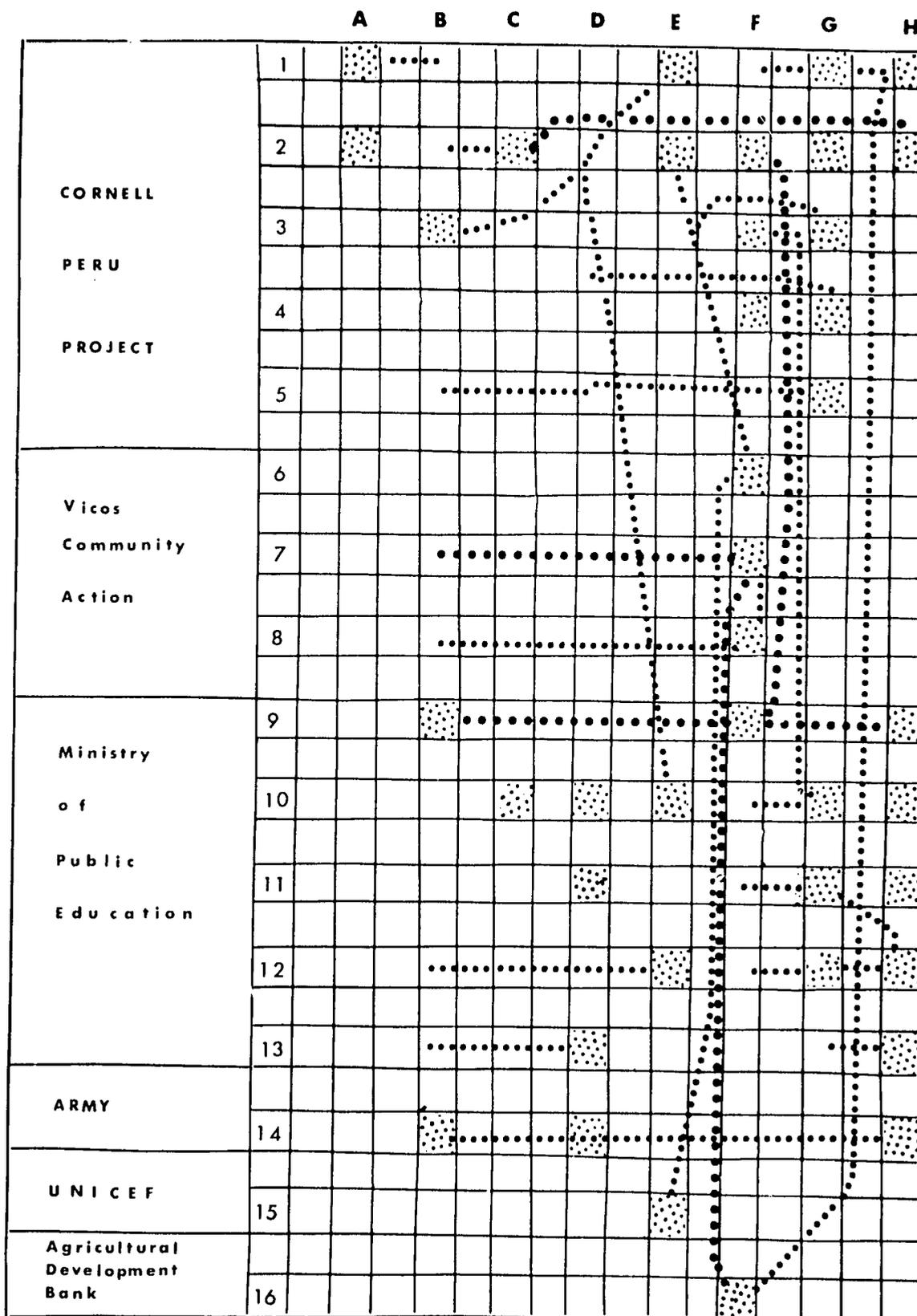
Indian foremen already appointed by the prior managers were brought into meetings run by the Project Director as seminars. These seminars stimulated peer-group interaction, open discussion of manorial decisions, and managerial acceptance of group consensus whenever possible. The staff sought to introduce new ideas to the Indian foremen during these discussions, generally settling, in practical terms of manorial management, for a compromise between the ideas of the mayorales and those of the scientific staff (Holmberg 1952:241). Thus, the Project Director sought to accustom a group of responsible leaders to orderly discussion of issues among peers, to majority decision-making, and the responsibility or wielding decision-making power. The photograph in Plate 1 for position A-1 on Chart 8 shows the personero (representative) and secretary of the autonomous Vicos community counting cash assets earned by the community farm enterprise in 1960.

A-2. Refusal to Adjudicate. The Cornell Peru Project scientific staff also influenced the distribution of power in Vicos by refusing to adjudicate disputes between serfs. This refusal to play the role of patron as it traditionally had been played affected power in two other social structures. It augmented the power of the emergent community council, since the scientific staff systematically suggested that minor disputes be resolved by the Indians themselves through decisions rendered by this group. It augmented the power of the local branches of the national judiciary, since major disputes were referred to the civil courts. In addition, serfs dissatisfied with council decisions might, and sometimes did, appeal to the courts.

To symbolize the Cornell Peru Project refusal to act as judge of differences between serfs, we reproduce in Plate 1 at A-2 a photograph of two inebriated men wrestling during a festival. Direct photographic representation of non-action is most difficult, so we show an example of what was not acted upon. This position on the context map illustrates one of its methodological merits. Using the contextual map approach to data analysis, the social scientist systematically encounters those areas of behavior which cannot be observed but must be discovered by interviewing. In this case, the anthropologist had no need to interview anyone to discover that the Cornell Peru Project staff playing the patronal role intentionally avoided playing the role of judge of serf disputes. This reflects one research economy in participant intervention.

In a different contextual map of Vicos set up to analyze the temporal progression of change, this same photograph can illustrate the baseline or pre-intervention conditions in the Affection value-category column.

CHART 8. Context Map Key for Institutional Impact Analysis





A 1

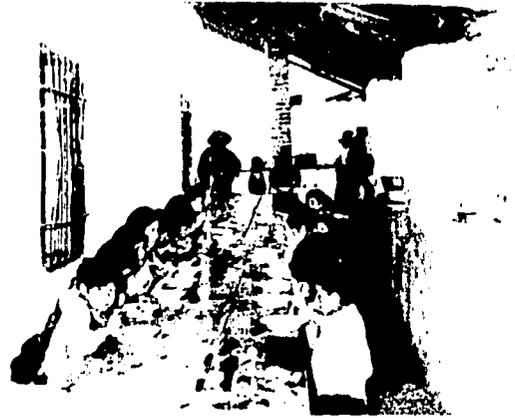


B 3

PLATE 1



A 2



Cornell Peru Project
Innovations

E 1

E 2

Abraham Guillen Photos

C 2





F2



H1

Abraham Guillen Photos



F3

CORNELL PERU
PROJECT
INNOVATIONS



F4



H2



G 1



G 4

Abraham Guillen Photos



G 2

CORNELL PERU

PROJECT

INNOVATIONS

PLATE 3

G 3



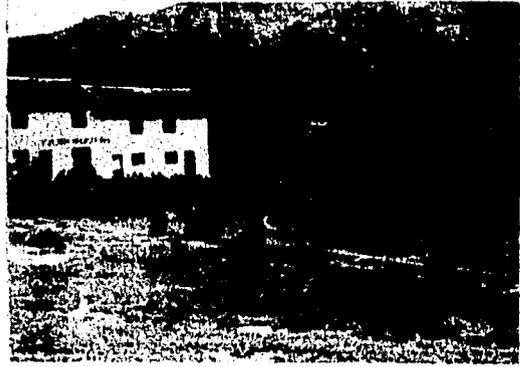
Paul L. Doughty Photo

G 5





E 15



F 6



F 7

PLATE 4



F 8



H 12

B 9



P.L.Doughty Photo



H F Dobyys Photo

C 10

E 1 0

PLATE 5

D 11

A. Guillen Photos



D 13



E 12

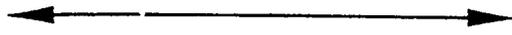
Ministry of
Public Education



G 10



H 9



A. Guillen Photos

PLATE 6

G 11

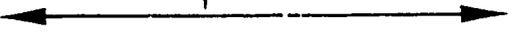


C. Blancas T. Photo

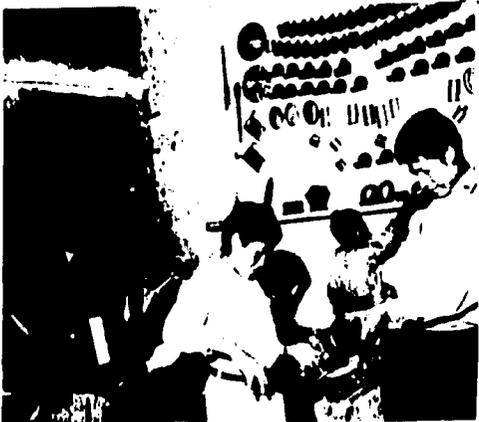


H 10

Ministry of Public Education



G 12



H 11



Respect

B-3. Indian Mothers Preparing School Lunch.

For position B-3 on Chart 8, we see in Plate 2 a photograph of mothers of Vicos school children at work in the school kitchen preparing a hot school lunch for the pupils. This phenomenon stems from the Cornell Peru Project innovation of a hot school lunch, discussed below under E-1, but is included under the Respect column because of the multiple effects of having Vicos mothers prepare their sons' lunches at school.

The respect balance between the sexes in Vicos itself was affected somewhat by this innovation. Traditional Vicos culture prescribed for women a very limited role in public affairs (Holmberg 1952:242). The women working in the school kitchen were still, to be sure, carrying on a traditional female role in preparing food primarily for male consumption. At the same time, they were doing so in a public institution outside their homes, thus demonstrating that even female skills had a functional place in the changing scheme of life.

The respect relations between the Vicos Indians and the surrounding non-Indian population was also affected somewhat by this innovation. Pupil-feeding programs are fairly widespread in Peruvian schools in the 1960's, but they were barely starting in 1952 when the Cornell Peru Project instituted such a program at Vicos. Thus, Vicos was ahead of nearby settlements in this regard, and serf personnel operated the pupil-feeding program, showing that it possessed capabilities not posited in the dominant group derogatory stereotype.

Rectitude

C-2. Militiamen Attending Church. For this position on Chart 8, we see in Plate 1 a photograph of Vicos militiamen attending mass in the local chapel for the first time as militiamen. This new group was created by Cornell Peru Project-financed drill sessions, required under Peru's military service law (discussed below under H-2). Its appearance at mass reflected its rapid incorporation into the righteous populace in terms of the local moral code. The militiamen moved promptly as a group into a more righteous position than they had occupied previously.

At the same time, the fact that Vicosinos of military service age actively drilled won them new respect from the non-Indians in the Callejon de Huaylas. The latter could always criticize the Indian serfs for draft evasion under

the traditional manorial regime. As the Cornell Peru Project instituted public drill in compliance with national law, the dominant group critics had to accord the Indians a greater measure of respect. Thus, we have indicated in the chart a carry-over effect line from C-2 into the Respect column, B.

Well-Being

E-1. Hot School Lunch. For position E-1 on Chart 8, we see in Plate 1 a photograph of Vicos school boys enjoying a hot school lunch provided by the Cornell Peru Project. The Project Director initiated this program early in 1952 in an effort to stimulate school attendance. His initiative was based on knowledge of the poor nutritional situation of Vicos youngsters and on knowledge of the correlation between being well fed and learning in the classroom environment. His goal was promptly achieved, as enrollment shot up from around twenty to some sixty pupils (Holmberg 1952:243). The children ate at long tables made locally from smooth planks and set up in the roofed corredor in front of the refurbished manor house.

This practical program began a long-range effort toward improving the basic nutritional situation of the Vicos population and particularly the school-age population. Basic research on the physical condition of the Vicos Indians revealed them to be slightly malnourished (Collazos *et al.* 1954:1222ff.), varying markedly from the pattern of maturation in North American youths (Newman & Collazos 1957: 431), and handicapped by nearly universal infestation with intestinal parasites (Holmberg 1952:243). The pupil-feeding program afforded an opportunity to determine whether the addition of a minimum of 1,200 calories per day to the school-boy's diet would accelerate his weight gains, growth in height, and bone mineralization.

E-2. Clinic. For this E-2 position on Chart 8, we see in Plate 1 a photograph of the clinic instituted by the Cornell Peru Project Director, who stands to the right observing one of the sessions. Holmberg hired a doctor and nurse from a neighboring town to come to Vicos regularly to diagnose serf ills and prescribe therapy.

We indicate here a long carry-over effect line down and across the chart to F-7 in the Wealth column, which we shall discuss below.

Wealth

F-2. New School Buildings. For position F-2 on Chart 8, we see in Plate 2 a photograph of the new Vicos school constructed in 1952-54, with two wings containing classrooms, an auditorium, kitchen, carpentry and metal-working shops, library, and office. In 1956, the Cornell Peru Project handed over this school plant to the Peruvian Ministry of Public Education (Vázquez 1965a:56). The first wing of the new school was constructed of Indian-donated sun-dried bricks by serf labor diverted from agricultural tasks to school building. The serfs were skeptical, suspecting that the building would turn out to be elegant quarters for the strange new patrons. They were convinced that it was really a school when the Minister of Labor and Indian Affairs personally dedicated it and the Ministry of Public Education dispatched two new teachers to it (Holmberg & Dobyns 1962:108). Thereafter, many serfs volunteered labor on the second wing. The Cornell Peru Project invested profits from manorial agricultural operations in roof tiles, window and door frames, glass windows, and other items that had to be purchased. Thus, a new form of capital investment was introduced to Vicos, contrasting sharply with the serfs' traditional form of investment in livestock.

The investment of manorial profits in the school plant brought in its train a series of consequences for the enlightenment of the Vicos population. Thus, we show on Chart 8 a carry-over effect line from F-2, the classrooms constructed by profit investment, to Column H, representing Enlightenment. We also show a carry-over effect line from F-2 down to line nine in the F column and from there to the Enlightenment column to indicate the stimulus the construction of a new school plant gave the Ministry of Public Education to provide increasing numbers of teachers to instruct the pupils who gradually filled the new classrooms.

F-3. Free Teachers' Quarters. For this position, F-3 on Chart 8, we see in Plate 2 a photograph of the teachers' quarters constructed by the Cornell Peru Project on the Vicos plaza. Teachers assigned to Peruvian rural schools typically encounter difficulties finding suitable housing. This contributes to a high rate of absenteeism on long week ends. The Cornell Peru Project scientific staff anticipated that teacher housing would be especially critical at Vicos because of the cultural gulf between the Indian serf population and Mestizo school teachers. The building of living quarters provided the teachers with rent-free housing, an inducement to teachers who would otherwise have to pay rent and were eager to save money.

F-4. New Indian Homes. For this position, F-4 on Chart 8, we see in Plate 2 a photograph of some of the new Indian homes under construction alongside the roadway entering the Vicos plaza. Under the traditional manorial system, serf house plots were assigned by the patron. The Cornell Peru Project scientific staff encouraged the council to make house plot assignment decisions and to open lots near the plaza to foster a concentrated nucleus of settlement.

Skill

Much of the change promoted by the Cornell Peru Project staff lay initially in the area of increasing the number and range of skills possessed by the Vicos serfs. The process was one of teaching by the staff and learning by the serfs, but the outcome lay in augmented skills rather than in enlightenment per se. So we enter a number of Project interventions in the Skill column on Chart 8.

G-1. New Planting Methods. The Cornell Peru Project scientific staff, playing the role of agricultural extension agents operating a sharecropping program as well as the directly managed manorial farming operations, taught the Vicos serfs new planting methods. One farm practice introduced was that of planting potatoes at regular intervals in parallel rows, as depicted in the growing-plant stage in the photograph reproduced in Plate 3 for this G-1 position. The seed potatoes planted in the manner shown in H-1 in Plate 2 resulted in these regular plant rows. They were introduced from outside Vicos, where the serfs had been accustomed to saving some of their own crop for planting during the next season. They were also dipped in fungicide prior to planting, and the plants were sprayed with insecticide to prevent the mosaic disease that had been decimating the serf fields prior to Cornell Peru Project intervention.

Successfully growing bumper crops of salable potatoes significantly increased the nutritional level of the Vicos serfs and provided them in time with a marketable surplus. Thus, we have drawn a carry-over effect line from G-1 to the Wealth column on Chart 8.

G-2. Orchards. For position G-2 on Chart 8 we see in Plate 3 a photograph of a Vicosino guiding irrigation water into the irrigation basin around a young deciduous fruit tree set out as part of the Cornell Peru Project's program of agricultural innovation. Holmberg (1952:242) had 250 peach trees planted in the course of the first year's activities, along with 200 eucalyptus and 500 pine seedlings.

The Project Director had high hopes that deciduous fruit production would bring a new source of income to Vicos farmers, particularly veterans of army service who felt somewhat more economic ambitions than serfs with no experience outside Vicos.

The competition between manorial management and serfs and later serf competition for pasturage on communally managed lands made the orchard program unsuccessful. The agile goats pastured by diminutive shepherds found the peach and apple leaves of the young fruit trees appetizing to the extent that, while a few of these plants survived into the middle 1960's, none ever grew to sufficient size to escape the ravages of hungry goats. We have not, therefore, drawn any carry-over effect line from G-2. The attempt at innovation proved abortive.

G-3. New Green Vegetables. For this position, G-3 on Chart 8, we view in Plate 3 a photograph of the Director of the Cornell Peru Project with the manorial gardener looking over cabbage plantings. The Director and his successors as Field Director at Vicos employed the manor house garden not only to supply the scientific staff table with green vegetables, but also as a testing and demonstration plot (Holmberg 1952:243). Vegetables not then grown by Vicos serfs were planted in the garden to find out whether they would grow and produce well in Vicos soil and altitude. Those that performed well and could contribute to the apparent dietary deficiencies were planted regularly and were offered for sale as long as the supply lasted. Thus, cabbage in particular was added to the local diet, with many housewives purchasing heads from the manorial garden and many families gradually obtaining plants to set out in their kitchen gardens. Lettuce also has enjoyed considerable acceptance by the Vicos population, being promoted both in the manorial garden and in the school pupil-feeding program.

We have drawn a carry-over effect line from G-3 to the Well-Being column, indicating the benefit to physical condition the Vicos population obtained by consuming increasing quantities of green, leafy vegetables.

G-4. Branding. For this position, G-4, on Chart 8, we see in Plate 3 a photograph of Vicosinos branding a cow. This skill was promoted by the Cornell Peru Project scientific staff in order to reduce disputes over livestock ownership (Holmberg 1952:143). The cattle owned by Vicos serfs under the manorial system had been earmarked but not branded. Disputes over unmarked animals were frequent.

The scientific staff concluded that such disputes were the primary cause of interfamily friction and physical violence in the serf population.

The Project Director therefore proposed to the serfs the establishment of a series of Vicos brands to be registered with the appropriate authorities and the maintenance of a brand book. Response to this proposal was lukewarm initially. Then the rumor began to spread that some of the largest cattle owners in Vicos were dragging their feet on branding because they had built up their herds through rustling, instead of honestly. Stung by these rumors, one of the largest livestock owners swung his support behind the proposal, and branding commenced.

The scientific staff's assessment of the role disputes over animal ownership played in interfamily feuds proved correct. With the introduction of branding, the number of animals whose ownership was disputed decreased, and so did the number of cases of violence between families.

G-5. Sewing. For this position on Chart 8 we find in Plate 3 a photograph of two Vicos women in sewing class, learning to use foot-treadle-powered sewing machines. Under the manorial system, Vicos women had not known how to sew. The usual European image of the peasant woman sitting at her spinning wheel and loom, producing homespun clothing for her family, was entirely inappropriate to Vicos circumstances under the manorial system. Women did spin wool by hand, and some men worked part-time as weavers producing the men's clothing. The women's skirts and blouses were made, however, from manufactured cloth cut and sewn by professional Mestizo seamstresses in nearby trading centers. Thus, one of the relatively high expenses of the serf family was purchasing cloth and the services of seamstresses.

The Cornell Peru Project scientific staff introduced one sewing machine and instructress on an experimental basis to find out whether the level of skills in the Vicos female population could be raised. The results were startling. Scores of women enrolled in sewing classes to learn to use the machines and to cut and sew their own and men's clothing. Within a few months, the experimental program was institutionalized by the Peruvian government's Indian integration agency, and half a dozen sewing machines were added to the equipment in use.

As Vicos women learned to sew their own clothing, they reduced the demands on the family exchequer for cash for clothing purchases. Thus, their rising level of skill brought more wealth to Vicos, so we have drawn a carry-over

effect line from G-5 to the Wealth column on Chart 8. At the same time, the acquisition of sewing skills, together with a smattering of Spanish and sometimes a bit of singing practice introduced into the sewing sessions by the Mestizo instructresses, materially changed the marriageability of the unmarried sewing students. Young Vicos men began to watch the windows of the sewing classrooms to find out which girls were learning to sew. The veterans of army service, themselves classified as good mates in the changing circumstances of Vicos life, began to view girls who could sew as more desirable spouses than those who could not. Thus, we have extended the carry-over effect line beyond the Wealth column to the Affection column on Chart 8.

In addition, the rising skill of the Vicos women and the reduced expenditure resulting in increased wealth affected the respect Mestizos accorded the Vicos inhabitants. We have, therefore, extended the carry-over effect line to the Respect column on Chart 8.

In Plate 3, we show a photograph of one Vicos woman watching another use a Singer sewing machine in the sewing room. This illustration corresponds to position G-5 on Chart 8.

Enlightenment

H-1. Sharecropping. The moving picture film, So That Men Are Free, includes scenes showing Dr. Mario C. Vázquez riding from house to house in Vicos to interview Indian farmers. In 1952 and succeeding years, Vázquez went from farmer to farmer participating in a Cornell Peru Project sharecropping program. He played the role of agricultural extension agent and benevolent patron at the same time, administering the sharecropping program in the view of the serfs taking part, but teaching them the farm practices that would enable them to succeed at potato-growing from the Cornell Peru Project point of view. The Project utilized a credit and farm management device in order to demonstrate to the serfs on their own fields the utility of modern agricultural technology.

We have already mentioned the complex of farm practices necessary for successful potato production at Vicos in discussing position G-1 on Chart 8. We have drawn a carry-over effect line from H-1, therefore, to G-1, which extends in turn to the Wealth column (F).

In addition, the training the Vicos serfs received in credit management during the sharecropping program, which

was converted to a cash basis during the final crop year under Cornell Peru Project direction, prepared them to participate in the supervised credit program financed by the Peruvian Agricultural Development Bank. So we have drawn another carry-over effect line from H-1 to F-16.

For Chart 8, position H-1, we reproduce in Plate 2 a photograph of Cornell Peru Project Director Allan R. Holmberg watching a Vicosino fertilizing seed potatoes planted at regular intervals in parallel rows. The fact that Holmberg's wife accompanied him to Vicos with their two children, one of whom appears in this 1952 photograph, demonstrated to the serfs as much as any other single action by the Cornell Peru Project staff that this patron would play a role different from that of previous absentee exploiters whose wives remained comfortable in the cities. Even the resident Mestizo overseers generally left their spouses in their home towns rather than bring them to the Indian frontier.

H-2. Militia Drill. The Director of the Cornell Peru Project quickly hired a Mestizo from a neighboring town who had achieved the rank of sergeant in the Peruvian army to come to Vicos to drill the serfs as the law required. The Director also obtained permission from army authorities to have the Vicosinos drill in Vicos, rather than to force them to walk six kilometers and more to Marcará to drill with the Mestizos of military service age there. For position H-2 on Chart 8 we see in Plate 2 a photograph of the ex-sergeant in uniform in front of the Vicos militiamen whom he is drilling. Because this compliance with national law brought the Vicosinos new respect from their Mestizo critics, we have drawn a carry-over effect line from H-2 to the Respect column, passing through C-2 where a photograph of militiamen attending mass appears.

Vicos Community Action

Wealth

F-6. Clinic Building. For this position on Chart 8, we see in Plate 4 a photograph of a clinic building being erected at one side of the Vicos plaza. Made of materials contributed by the Cornell Peru Project, this structure was voluntarily erected by the people of Vicos and neighboring Recuayhuanca. Their investment in additional public building at Vicos resulted from the operation of the clinic sponsored by the Cornell Peru Project and a UNICEF mobile health team (see E-15).

Since this building expressed Indian gratitude for previous clinic services as well as a provision for future health services, we have drawn a carry-over effect line from the Cornell Peru Project clinic at position E-2 on Chart 8 to the present F-6. Then, because this building provided a locale for the UNICEF mobile team to use in Vicos, we have drawn another carry-over effect line from F-6 to E-15.

F-7. Vicos Council. For position F-7 on Chart 8, we see in Plate 4 a photograph of men who have acted as Agricultural Director (Personero, as he is called) and Secretary of the Vicos council (see A-1 on Plate 1). Following the loss of the Cornell Peru Project investment of manorial agricultural profits in Vicos improvements, the Indians continued to operate the ex-manorial fields on a commercial basis once they assumed direction of the estate. They banked their agricultural profits, however, in interest-earning accounts against the day when they could purchase the land. Thus, each year's crop production created new monetary capital and savings to augment the regional and national economy.

F-8. Land Purchase. Finally, in 1962 the Vicos Indians were authorized to purchase directly from the Public Charity Society of Huaraz the lands they occupied. They made a down payment of one-half million soles from their various bank accounts, one-fourth of the purchase price, as shown in the photograph for position F-8 in Plate 4. Thus, they ceased to be serfs and became peasant landowners. Since this change in land tenure materially affected the social status of the Indian inhabitants, we have drawn a carry-over effect line from F-8 to the Wealth column, to indicate the increase in investment, then on to the Well-Being column to indicate the increased security in their possessions and lives of landowners as compared to serfs, and still further on to the Respect column to indicate the respect accorded to the landowner in Peru (Dobyns 1962a: 14).

The Ministry of Public Education

A massive intervention of the Peruvian Ministry of Public Education in Vicos was triggered by the Cornell Peru Project construction of an enlarged school plant and the stimulus of the inter-ministerial coordinating committee formed in the national capital. Thus, the contributions of Project and Ministry to the process of cultural change in Vicos have often been mixed, so that they are somewhat difficult to illustrate discreetly in two dimensions.

Respect

B-9. Excursions. The Peruvian custom of teachers conducting excursions of pupils to schools other than their own played a significant role in changing the psychological set of Vicos children toward outsiders. As the teachers sent to Vicos took their pupils to other smaller and poorer schools, the Indian children began to take pride in the quality of their own school plant. At the same time, excursions bringing pupils from other schools to Vicos resulted in pupil and teacher exclamations of admiration for the local installation. These experiences quickly diminished the traditional shyness of young Vicosinos (Blanchard 1955:279). These experiences were made possible, of course, by the size and quality of the new school buildings constructed at Vicos by the Cornell Peru Project and serfs. We show, therefore, a carry-over effect line from the new school shown at F-9 to B-9 and bring another such line down the Wealth column from line two to line nine.

In Plate 5, we reproduce for position B-9 on Chart 8 a photograph of a group of excursionists dismounting from a truck that delivered them to the Vicos public square. Instead of fleeing from such strangers as they would have under manorial conditions, the Vicos school boys quickly learned to greet them with pride rather than fear.

Rectitude

C-10. School and Council. The Adult Education Specialist on the staff of the Peasant Nuclear School offers the residents of Vicos instruction in much more than the basic skills of literacy. In this photograph in Plate 5 for position C-10 on Chart 8, he appears explaining Peruvian national government structure to delegates on the Vicos Community Council in 1960.

Affection

D-11. Marbles. The recreational repertory of the Vicos children was increased not only by deliberate change efforts but also by unplanned diffusion. When the Cornell Peru Project built a new school, it triggered the Ministry of Public Education into dispatching teachers, and they required a janitor, and the Mestizo janitor had a son who played marbles. Moved away from his marble-playing Mestizo playmates, the janitor's son quickly found out the only way to continue enjoying this game was to teach it to his Indian age-mates in Vicos. That he proceeded to do. So another item was added to the parental expense of sending boys to school--purchasing a basic stock of marbles. Thus, Vicos school boys learned a Western-style competitive, acquisitive game compounded of skill and practice, with rules governing interpersonal interaction. In Plate 5,

we reproduce for position D-11 on Chart 8 a photograph of schoolboys shooting marble, a new kind of fun that accompanied the formal school system to Vicos.

D-13. Cooperative Sports. Besides encouraging individual recreation, the Cornell Peru Project fostered team sports requiring interteam cooperation, as well as intrateam rivalry. A soccer field was early leveled by the school, and the Peruvian national sport was taught to Vicos school boys. Within a few years, Vicos teams were beating Mestizo teams from settlements elsewhere in the Callejon de Huaylas. The picture in Plate 5 for position D-13 on Chart 8 shows a soccer game in progress on the Vicos Central School field, leveled and walled in by the Cornell Peru Project.

Well-Being

E-10. Sanitation. While the typical Vicos family traditionally ate its meals from a gourd container, the hot school lunch has been served in china soup bowls. These can be washed, and sanitation in fact calls for their being washed. The beneficiaries of the hot lunch program are trained to rinse their spoons and plates off in the running water piped to the school, so that they pass inspection before dessert (usually an orange or banana) is handed out. This practice, along with an expectation that children will wash their hands before lining up to enter the auditorium to be served, conveys a modicum of hygienic training to supplement the general principles expounded in the classroom.

For position E-10 on Chart 8, we reproduce in Plate 5 a photograph of Vicos schoolboys rinsing their plates in water from taps in the school yard.

E-12. Personal Hygiene. Faced with pupils with lousy heads, the Mestizo teachers assigned to the Vicos school quickly instituted measures to exterminate the parasites. Shearing the abundant hair cleanly from the heads combined with insect powders and scrubbing to do the job. Thus, pupils learned not only the formal lessons prescribed by the national curriculum fixed in Lima, but also the informal lessons of personal hygiene, haircutting, and social respectability. While the manifest function of haircutting was originally to improve personal hygiene, its latent function of increasing social acceptability of the Indian population has been important enough for us to draw a carry-over effect line from the photograph of student haircutting at position E-12 on Chart 8 to the Respect column (B).

The Cornell Peru Project played a catalytic role in Vicos haircutting by providing hair-clippers and the other barbering implements the teachers put to work (Vázquez 1965a:157). For position E-12 on Chart 8, we reproduce in Plate 5 a photograph of a Vicos schoolboy with a close-clipped head intently cutting the locks of one of his peers.

Wealth

F-9. New School. At this position on Chart 8 we see another entry for the new school built at Vicos early in the Cornell Peru Project's efforts to guide change. Analytically, this entry repeats that above in position F-2, simply to emphasize the importance of a school plant large enough to house the school-age population which permitted the Ministry of Public Education to assign sufficient teachers to Vicos to teach all five primary grades. This, in turn, made possible a transition year during which Quechua-speaking children learned enough Spanish to go into graded classes. This interrelationship is represented on the chart by the two-way arrow between positions F-9 and H-9.

Since the main business of a school is to enlighten pupils, we shall proceed with our discussion of the institutions in the Enlightenment column (H) before taking up the other positions in this section of the chart.

Skill

G-10. Carpentry Shop. A photographic view of the Vicos central school carpentry shop in use appears in Plate 6 for this G-10 position on Chart 8. As in the metal-working classes, carpentry shop instruction emphasizes learning to make wooden objects useful to the pupil or his family. The general level of skill at rough carpentry in the Vicos population has risen markedly as a result of formal instruction in carpentry. Even more dramatic has been the increase in the number of Vicosinos able to gain a part-time or full-time livelihood by working as carpenters. Whereas three men claimed to be carpenters in Vicos in 1952, by 1963 the number had increased to eleven (Alers 1965:446).

Not all this increase came from formal instruction in the school. Some resulted from informal apprenticeship arranged by the Cornell Peru Project in the course of its construction in Vicos. Mestizo journeymen who worked on these jobs were required to instruct their Vicosino helpers in the techniques of each trade. Thus a few Vicosinos learned the elements of carpentry outside the school, so we have drawn a carry-over effect line from the teachers' quarters at position F-3 on the chart down to the carpentry shop at G-10. Then we extend the effect line into the

the Wealth column to symbolize the increased occupational specialization and consequent cash income rise that has occurred.

G-11. Farm Practices. For this position on Chart 8 we view a photograph in Plate 6 of an agricultural extension agent checking Indian use of back-strap insecticide spray pumps. We have shown a carry-over effect line from position H-12 to this position G-11 to indicate the relationship between the teaching performed by the extension agent and the skills acquired and employed by the Indians. In addition, we have drawn a carry-over effect line from G-11 to the Wealth column (F) to indicate the continued accumulation of wealth gained through commercial farming in Vicos made possible by farming skills acquired since 1952.

The Cornell Peru Project agricultural extension program in potato production reached nearly all Vicos farmers between 1952 and 1957, resulting in a wholesale change in potato-growing practices. The Nuclear Peasant School established in Vicos by the Peruvian Ministry of Public Education has provided reinforcement for the lessons learned prior to 1957 and kept technical advice available to the Indians. The Nuclear School staff includes one full-time agricultural extension agent who divides his time between Vicos and adjacent settlements.

G-12. Metal-Working Shop. We have shown a carry-over effect line from H-12 to G-12, where we symbolize the Vicos Central School metal-working shop. The shop teacher and the extension agent cooperate, the shop emphasizing the production of tools usable in farm operations and utensils usable in Indian homes.

Vicos lived in the Iron Age in 1951 only because its Indian serfs occasionally could afford to import an iron or steel tool or utensil at what was very great cost in terms of the local economy. Fundamentally, the population lived in a Stone Age insofar as its own production was concerned. Vicos plows were simple wooden implements until the Cornell Peru Project introduced steel points to give plows longer life and enable them to cut better. Even this innovation was rejected when first offered in the 1953 potato harvest (Blanchard 5 Aug. 1953 No. 412).

In long-range terms, the Vicos prevocational school has taken the first step toward bringing the Vicosinos actively into the Metal Age. In a cold-metal-working shop, one of the teachers imparts skills in fashioning simple gardening tools and household utensils from sheet metals.

Discarded "tin cans" are a significant resource in low-income regions and comprise a major source of raw material for the Vicos school metal shop.

For position G-12 on Chart 8, we illustrate in Plate 6 several Indian students at work with the metal-working-shop teacher, a classroom teacher who has served at Vicos for many years and is well liked by his students.

Enlightenment

H-9. Complete Primary Instruction. Once a school plant capacious enough to seat the Vicos school-age population was erected, the Peruvian Ministry of Education dispatched as rapidly as possible sufficient teachers to offer the complete primary school curriculum. This meant, in essence, adding one grade each year as students progressed from the zero point of 1952 to a point at which all five grades could be taught.

For position H-9 on Chart 8 we show in Plate 6 a photograph of the first principal of the complete primary school at work in a Vicos classroom. This educator was one of the first new teachers the Ministry assigned Vicos in 1953, and he won the coveted national teachers' award (Palmas Magisteriales) for his pedagogical labors there, although he eventually lost the confidence of the parents of his pupils and was transferred elsewhere in 1961.

H-10. Evening Literacy Class. One of the first new teachers dispatched to Vicos by the Ministry of Public Education joined enthusiastically in the Cornell Peru Project efforts to foster rapid cultural change. He accepted a suggestion that he teach an adult literacy class at night, and younger men evidenced interest in such instruction. Thus began a small-scale adult education drive that has continued under successive teachers and the adult education specialist on the Rural Nuclear Peasant School staff. Such a class is shown by a photograph in Plate 6.

H-11. Militia Literacy Class. The same teacher launched a literacy class for the militiamen being drilled at Vicos by the former sergeant contracted for by the Cornell Peru Project. This educational effort, depicted in the photograph in Plate 6 at position H-11 for Chart 8, lapsed with the cessation of compulsory drilling.

H-12. Agricultural Extension. The establishment of a Rural Peasant Nuclear School at Vicos brought the assignment of an agricultural engineer trained at the National Agrarian University. This technician carried on an active agricultural extension program with adults and

school pupils. At position H-12 on Chart 8 we see in Plate 4 a photograph of this extension agent with part of the stock of diversified agricultural tools being gradually introduced for use on Vicos farm plots. Formerly, Vicos farmers employed only a long-bladed, short-handled hoe and a straight iron bar to supplement their simple wooden plows.

H-13. Musical Cooperation. For this position on Chart 8 we have a school teacher directing an orchestra of pupils with simple instruments, learning at least the elements of rhythm and playing in unison. In a social situation which required very little coordination of effort under manorial conditions, each experience in cooperation taught the Vicos school children significant skills to be used in the new environment of community autonomy.

While the initial effort to teach music in the school produced little effect, young men requested a Peace Corps volunteer to teach them to play Western-style instruments so that they could form their own orchestra (Dobyns, Doughty & Holmberg 1965). When the volunteer abandoned the effort, they pooled their financial resources to hire a Mestizo band instructor from a town in the valley. Thus, the level of musical skills in Vicos has steadily risen.

The Peruvian Army

Peru has for some time had a compulsory military service law. Under manorial conditions, the Vicos management encouraged the native politico-religious authorities (varayoc) to help young men of draft age avoid the impressment parties sent into rural areas seeking conscripts. The Cornell Peru Project scientific staff encouraged the Vicos male populace to legalize and regularize its relations with the draft authorities and army. Project members photographed Vicos men and visited the appropriate offices with them to aid them in obtaining personal identification documents. They also encouraged men of draft age to volunteer to serve in the armed forces. As a result, significant numbers of Vicos men entered the army for two years of service, later to return to Vicos with experiences different from those of their elders.

Enlightenment

The Peruvian Army has long recognized that its conscripts are overwhelmingly Indians in cultural terms and has geared its conscript training to social reality. It aims to dissuade conscripts from chewing coca, to teach them personal hygiene, obedience, the Spanish language, and discipline.

Among the significant lessons Vicos conscripts learned was the fact that Our Lady of Mercy was patroness of the Peruvian army. This army contribution to Vicos cultural change is indicated on Chart 8 at position H-14.

Affection

As soon as the first few Vicos conscripts had served their two years in the army and returned home, they formed a social club. For the first time, an interest group had been created in Vicos on some basis other than kinship or politico-religious authority. This innovation is indicated at position D-14 on Chart 8, with a carry-over effect line drawn from army conscript training at H-14.

Respect

As we mentioned above, Vicos conscripts learned in the army that Our Lady of Mercy was patroness of the organization. Her festival was one of the three most important ones celebrated at Vicos, also. As more and more young Vicos men served as conscripts and returned home, they insisted on ever more "proper" observance of the Vicos celebration. Finally, in 1960, licenciados, as army veterans are called, thrust aside the traditional politico-religious authorities in charge of the festival and took over the responsibility of carrying the litter of the local statue of Our Lady of Mercy, as shown in the photograph at position B-14 on Chart 8.

This move reflected the increasing respect accorded the army veterans in Vicos. It also meant increased respect from the Mestizo population outside Vicos, as the local festival became consciously identified with the national cult of Our Lady of Mercy in the armed forces.

UNICEF (United Nations Children's Fund)

Well-Being

As we mentioned above, the Cornell Peru Project Director initiated a periodic clinic for Vicos serfs, as shown at position E-2 on Chart 8. We drew a line from that clinic to position F-6, where the chart shows the clinic building constructed by the Vicos and Recuayhuanca people. We have drawn another effect line from there to position E-15. There we see for this position in Plate 4 a photograph of a UNICEF mobile-team dentist examining a Vicos woman in the clinic building. From 1954 to 1960, the UNICEF mobile team operating in the Callejon de Huaylas provided weekly clinic service to the Vicos population.

Agricultural Development BankWealth

After the Vicos ex-serfs took over direction of their own affairs and decided to continue commercial farming to raise money with which to purchase their land, they obtained crop loans annually from the Peruvian Agricultural Development Bank. Personnel from the Ministry of Agriculture joined in the supervised credit program. The capital loaned to Vicos by the bank allowed the Indians to operate an efficient commercial enterprise along the technical lines learned under the Cornell Peru Project and to turn a tidy annual profit. This program is indicated at position F-16 on Chart 8.

The multi-institutional nature of the integrated program of cultural change the Cornell Peru Project set in motion at Vicos is well illustrated by the connections shown on Chart 8 between the Cornell Peru Project agricultural and extension program (at H-1), the Peruvian Agricultural Development Bank's crop loan program (F-16), and the Vicos Community farm enterprise (F-7), which created the capital with which to purchase the Vicos lands (F-8), winning significantly increased respect for the inhabitants of Vicos (B-7 and B-8).

VI. CROSS-CULTURAL VALUE CATEGORIES

The contextual mapping technique for analyzing cultural change is essentially a very flexible means for two-dimensional manipulation of data. In analyzing anthropological data concerning the many changes occurring at Vicos, Holmberg has settled on a particular set of cross-cultural value categories as very useful analytical units. These value categories are eight in number. They were defined by Lasswell and Kaplan (1950:55-56) as welfare values and deference values. The former are "goal-events" necessary for maintaining the human organism in an active state: Well-Being, Wealth, Skill, and Enlightenment. The latter are goal-events consisting of "being taken into consideration:" Power, Respect, Rectitude, and Affection. These eight value categories may be assigned different degrees of importance by people in different societies and subsocieties, but they appear to be values that always play some role in human social behavior.

One of the attractions of these value categories for contextual mapping lies not only in their promise as cross-culturally usable analytical divisions of data, but also in their capacity to subsume the 130 empirical goals and lines of action established from the Vicos field data. The analytical economy involved may be quickly stated as the difference between 130×10 years (for a 1951-1961 temporal dimension) and 8×10 years, or a difference of $(1300 - 80) = 1,220$ analytical units. The simpler form of contextual mapping is outlined in Chart 9 using a fifteen-year temporal format.

One reason for reducing from 130 to eight headings is the criterion of what Lasswell and Holmberg (1966:14) call "contextuality." Like a general theory, a general analytical method has to be sufficiently inclusive to take account of the interactions that are significant in social change.

As soon as the analyst engages in reductionism, he tends to discover that he must either reify field data into progressively more general concepts or choose one particular institution as an operational definition of the value category. In the present illustration of this method, we have chosen to focus attention on a limited number of institutions which operationally define each of the value categories for purposes of this monograph.

Starting from the eight basic value categories, the analyst can easily work back to the full 130 original categories with which Holmberg and his colleagues began, or he can reach any other number of categories that fits the data being analyzed.

In preparing this illustration, we considered including both the organization of Vicos and Vicosino participation in Peruvian direct administration under the power value category. We have limited the illustration finally to the changing organization of power on the Vicos estate itself, involving the dismantling of the patronal institution and the building of a new community elective council institution to direct community affairs.

One of the most frequent questions middle-class Peruvian visitors to Vicos ask is why the Cornell Peru Project has not dressed all the Indians up in proper clothing. In a status-conscious society, visible symbols are important components of respect, at least of the instant variety. We have resisted the temptation to index the Respect value category by clothing changes in Vicos, however, and employ Vicosino participation in national civic institutions, instead, as a fundamentally more meaningful definition.

Having made this choice, we have naturally inclined to a related institutional index for the Rectitude value category. We have employed as the operational definition of this category Vicosino participation in the Peruvian armed forces.

There are many possible institutional indices that might be employed to define operationally the Affection value category. We have chosen a fairly public type of index, new forms of recreation that have introduced an element of fun and recreational use of leisure time that was formerly lacking in Vicos.

To index the Well-Being value category we have chosen to employ nutrition as affected by a specific institution, the hot school lunch program, which dates from the beginning of the Cornell Peru Project. Perhaps we should have focused attention on medical services, but these have involved various institutions and have enjoyed a checkered history which we have discussed at some length in another monograph.

In dealing with the Wealth value category, we might easily emphasize the fairly dramatic shift in Vicos from general poverty to relative affluence by local standards.

To do so would be to direct attention to symptoms rather than causes. Much the same would be true if we were to employ changes in domestic housing as an index of wealth. So we have decided to define operationally the Wealth value category for present purposes in terms of the actions of the institutions providing Vicos with credit and the uses Vicos has made of credit to create new wealth.

Considering the Skill value category, we could easily measure the impressive increase in the number of Vicosinos with primary occupations other than agriculture today compared to 1952 or the gross increase in secondary occupations. To do so would again be, we feel, to direct attention somewhat more to symptoms than causes. We might focus our attention upon cattle-raising, where rather dramatic changes in technology occurred in the past few years under the stimulus of hoof-and-mouth-disease epidemics. Yet animal husbandry has changed relatively little in holistic terms. So we have thought it appropriate to define operationally the Skill value category in terms of the new farm practices taught to Vicos subsistence farmers, first by the Cornell Peru Project and later by the Nuclear Peasant School extension agent in cooperation with the Interamerican Cooperative Food Production Service and the Peruvian Agricultural Development Bank.

Finally, in pondering how to illustrate best the Enlightenment value category, we were tempted to define this operationally in terms of adult education programs. Finally we decided, however, to focus the illustration upon the principal formal educational institution in Vicos, the central school, and consider academic instruction.

We can now point out another analytical advantage which the contextual map set up in terms of cross-culturally applicable value categories holds over that set up in terms of empirical headings. The value categories identify, in the fifteen-year format, ninety analytical units for which data should be available and stated on the contextual map. Thus, the contextual map set up in terms of value categories derived from a general theory of social behavior, rather than from the data from a specific community to be analyzed, serves as a check on data collection. If data collection is known to have progressed apace in all value category areas, then blanks in the contextual map indicate relatively stable aspects of the social system, where nothing appears to be happening.

If one sets up a contextual map in terms of empirical categories, one runs certain risks of mapping what the research staff finds interesting in the field, which may not be very significant for cross-cultural generalization.

The use of the welfare-deference values guards against this tendency, as would the use of any appropriate set of general categories.

Let us now proceed to illustrate the data collection checking function of the value categories. We shall review the data in narrative form, there being no readily available alternative feasible and convenient for the reader. We shall refer, therefore, to the cells or contextual map analytical units in Chart 9 corresponding to a particular year and value category thus: "Power-1952," or "Skill 1961," and so on.

Beginning with the Power value category when the Cornell Peru Project commenced operations, we start at the analytical position Power baseline, which for brevity we shall show throughout this discussion as 1951 rather than repeat ourselves.

Power

1951. The "alcalde pedaneo" system of indigenous authorities fulfilled the traditional function of carrying out the desires of the patron and celebrating religious festivals. The mayorales, as the manorial officials drawn from the serf population, were the most powerful individuals in the population and almost entirely management supporters (Monge & Vázquez 1957:28).

Under the manorial system, however, there were no autonomous local authorities to watch over the interests of the community. The varayoc were subordinated to the manorial management (Vázquez 1959:236).

In compensation for the land whose use they enjoyed, the Vicosinos were obliged to contribute personal labor in Vicos and outside for three days a week, or 156 days per year, to the lessee, using their own tools and animals. In addition, the Indians provided in rotation free services such as those of stable boy, cook, shepherd, roustabout, and guard (Vázquez 1959:237).

The renters utilized Indian personal labor, animals, and tools in return for subsistence plots and a payment of sixty centavos per week (Monge & Vázquez 1957:27).

1952. On January 1, 1952, the Cornell Peru Project took legal possession of the Vicos estate for five years as sublessor.

Despite their previous failures to achieve their freedom from the subordinate state in which they lived, the Vicosinos desired it and frequently sought it (Monge & Vázquez 1957: 27).

Once in the power position, the Cornell Peru Project Director abolished the free services which serfs had been obliged to render the manor and which motivated their principal complaints. Volunteers were hired to perform the services of cooks and grooms. In addition, the Project paid the serfs the small cash wage (equivalent to approximately three U. S. cents per week) which they had not received for three years. Thus, a basis was established for building "positive relations" with the Indians (Holmberg 1965:5).

Limited power was to be given to the mayorales, especially in land disputes. In a limited way they were "actually influencing the destinies of their fellow Vicosinos." It was decided not to give them "the power to rule their fellow men."

The method of carrying out the Vicos program can be briefly described.

Each Monday there was a seminar session for our group in which the problems of the manor, as well as the academic studies of Vicos and neighboring areas were discussed. Each Tuesday, our group in Vicos held another seminar with the Indian leaders, or mayorales, in which problems of the manor were discussed and new ideas were introduced for their consideration. In these meetings we usually reached some agreement or compromise between our ideas and theirs. Each Wednesday we took advantage of an ancient custom, that of the labor shape-up (mando), at which the hacendado used to issue orders to the Indians concerning their duties for the ensuing week. We held a meeting with all the Indians who worked for the estate and discussed with them the agreements that had been reached with the mayorales the previous day. Thus, some adjustments could be made to satisfy the larger group (Holmberg 1952:241).

Mando. It is interesting to note that in the beginning it was rare for anyone to speak up at these meetings, while after five months of meetings almost everyone wanted to speak at the same time (Holmberg 1952:241).

1953. There was less stealing now, under the mayorales, than there had been under the strict supervision of the Mestizos, according to Enrique Luna, the administrator (Blanchard, 8 August 1953, No. 241).

1954. The salaries of the mayorales were raised with the aim of standardizing all salaries (Blanchard, 6 January 1954, No. 623).

It was decided to increase the number of mayorales to seven (Blanchard, 24 February 1954, No. 623).

1955. Temple is raised to six soles per week with no more giving of crops (Blanchard, 12 January 1955, No. 623).

1956. The Peruvian Indian Institute, on the basis of Cornell Peru Project reports, requested that the government expropriate the Vicos property for its inhabitants (Monge & Vázquez 1957:27).

The Vicos Hacienda was expropriated, by Supreme Resolution 02 of 11 December thereby making Vicos a community of free men. The community was reorganized and divided into ten zones. Each of these zones was represented by a democratically elected delegate, and this council of delegates was responsible for the community (Vázquez 1957:223).

The traditional work system of the manor was replaced by collective labor, employed as needed, which was oriented toward modern cooperativism. This labor was carried out on the lands which had formerly been exploited by the lessee, and the profits obtained were expected to pay the price of the expropriated land and, in the future, to promote progress in the community (Vázquez 1957:223).

A council of delegates was organized, made up of councilmen democratically elected by acclamation who represented their zones of residence. The economic and administrative control of Vicos was in the hands of this council, which was advised by a Cornell Peru Project anthropologist. The Council made decisions by majority vote. Most councilmen were younger men with experience in Mestizo society outside Vicos (Monge & Vázquez 1957:28).

1957. Besides the earnings mentioned, the Vicosinos received benefits from the land which had formerly been exploited by the lessee. They participated in the harvests or acquired the products at a low price. The profits of agricultural production were saved to pay the price of the property which had been expropriated for their benefit.

The previous organization had by now been abolished, and a transitional communal system, oriented toward a cooperative for agriculture and cattle-raising, had been established.

Since the disappearance of the hacienda system, the Vicosinos had more time (110 days more than before) to devote to their farming and to take trips outside the area in search of better wages than those received in the neighboring pueblos. This last change created a scarcity of manual laborers in the neighboring Mestizo pueblo of Marcará.

In the agricultural campaign of 1957-58 the Vicosinos worked only 46 days out of the year, and the community paid part of the cost of repairing their tools out of its funds (Vázquez 1959:237).

The organization of a community in sociological terms was underway, attempting to halt the process of social disorganization that could have originated as a consequence of the radical change in the manorial system. The attempt sought to unite the people around their common interests, stimulating local pride and strengthening the position of the new councilmen (Monge & Vázquez 1957:27).

1958. The expropriation process not having been completed, the 1956 decree expired at the end of two years. Another decree of expropriation was, therefore, issued late in 1958 (Dobyns 1961:1).

The council of delegates was now made up entirely of individuals who participated little in Mestizo culture.

Improving agricultural technology and termination of exploitation of Vicos labor reduced labor tax to 48 days per person for the agricultural season, or a little less than one-third of forced labor extracted seven years earlier (Holmberg, Dobyns & Vázquez 1961:42; Vázquez 1959:233).

1960. The community showed greater social cohesion as the desire grew to become landowners and members of a society with equal rights and obligations.

The Vicosinos were now striving to work more, not less, since they knew they were working for their own and the community's benefit, and not for a third party. Thus, in the last agricultural campaign, the majority of the zones asked to plant more potatoes than the amount recommended by the SCIPA adviser.

The Executive Order extending the expropriation decree expired in November (Dobyns 1961:1).

A system of secret balloting was introduced into the election of zone delegates to the community council. Each candidate was assigned a color, and ballots consisted of

colored pieces of cardboard (after thick-fingered farmers complained of the difficulty of picking up paper) dropped into a pasteboard box.

1961. Vicosinos held their fourth election of delegates to the community council, voting by the secret ballot system which was introduced in 1960 (Dobyns 1961:2).

In July of 1961 the Sociedad de Beneficencia Pública de Huaraz telegraphed official notification to the Cornell Peru Project that it intended to resume control of the Vicos estate and auction off the right to exploit it to the highest bidder.

A few days later in that month, the United States ambassador to Peru visited Vicos in the course of a trip through the Callejón de Huaylas. The following month, Mr. Edward Kennedy visited Vicos in a rapid trip through Latin America. In a later protocol call upon the Peruvian President, who was scheduled to visit the President of the United States in Washington within a few weeks, Mr. Kennedy brought up the desire of the Vicosinos for legal authority to purchase the lands they occupied. President Prado quickly followed up this high-level inquiry, and the two government ministries concerned reached agreement with the Public Charity Society early in September.

1962. The President of the Peruvian Indian Institute and Co-Director of the Cornell Peru Project, reinforced by pressure from U. S. government officials, persuaded the President to empower the Minister of Labor and Indian Affairs to arrange the sale of Vicos to its Indian inhabitants by the Public Charity Society of Huaraz on terms the Indians could afford, and Vicos finally became independent in July (Holmberg 1965:7-8).

Early in April, Dr. Allan R. Holmberg and Dr. Carlos Monge Medrano, Director and Co-Director of the Cornell Peru Project, attended ceremonies in the Ministry of Labor and Indian Affairs during which Celso León H. tendered a bank check for one-half million soles as the Indian down payment on the Vicos lands. The Honorable Luis Alvarado Garrido accepted on behalf of the government of Peru and conveyed the payment to the Public Charity Society of Huaraz. The government of Peru made available one million soles to the Public Charity Society in the guise of a twenty-year, no-interest loan to the Vicos community. The Vicosinos agreed to pay the Public Charity Society another half million soles over a three-year period.

than before. A moratorium was obtained on the payment of the mortgage quota because of a bad crop year (Vázquez 1965b:7-8).

1966. The Vicosinos faced the future almost completely on their own, as the Cornell Peru Project withdrew all scientific personnel from the estate, thus terminating its advisory services, and the Ancash Indian Integration Program began transferring its personnel to Huaraz.

Respect

1951. The Vicosinos existed in a state of dependency upon the patron leasing the manor. Prolonged patron-client relationships had virtually eliminated the possibility of the serfs behaving as free men (Vázquez 1959:241). The subordinate social position of the serf was symbolized by the habit of kissing the hand of the patron in token of submission.

1952. The Cornell Peru Project staff discouraged such symbols of Indian subordination as hand-kissing and deliberately employed the Spanish greetings which carry none of the connotations of superordination-subordination found in the local Quechua greetings. The staff signaled its respect for Vicosinos in the mayorales seminars on Tuesdays and by eating with Indians on occasion in this and other contexts. The staff arranged moving picture showings so that no seats were provided, forcing dominant group members to sit on the ground with subordinate group members, in contrast to local patterns in buildings where Mestizos sat and Indians stood.

1954. A Vicos school board (without administrative power under Peruvian law) was elected and began to meet with teachers.

Peruvian Independence Day was celebrated in Vicos for the first time. The Vicos militiamen joined with the school teachers and pupils from nearby schools as well as from the Vicos school (Blanchard 1955:279). Thus, the Vicos social isolates adopted quickly a major symbol of national civic integration.

At the end of the military year, the Vicos militia received honorable mention at ceremonies in the provincial capital (Blanchard 1955:281), a concrete step toward augmented respect from dominant group members who had denigrated Indian evasion of the national law requiring military service.

The Vicos school received visits from twenty-four other schools, lessening the timidity of the Indian students (Blanchard 1955:279).

1955. Vicos celebrated Peru's Independence Day for the second time. Fifty young men in uniform took part in the fiestas Patrias, whereas only five or six had done so in 1954 (Blanchard 1956:207).

Numerous school excursions, not only from the Callejón de Huaylas, but also from the coast brought visitors to the Vicos school (Blanchard 1956:209).

Provincial officials and militia from the provincial capital paid a visit to Vicos (Blanchard 1956:211), giving evidence of swiftly changing dominant group attitudes toward the local Indians.

1957. A dramatic demonstration of respect accorded to the Cornell Peru Project and Indians of Vicos occurred from January 25 to 28 when a large group of high governmental officials toured Vicos and other parts of the Callejón de Huaylas. The Technical Committee of the Peruvian Indian Institute, created to coordinate the contributions of several ministries to Indian integration programs at Vicos, in Puno, and elsewhere, organized the trip. Three cabinet members participated: Dr. Ricardo Elias Aparicio, Minister of Labor and Indian Affairs; Dr. Jorge Basadre, Minister of Public Education; and Ing. Ignacio Masias, Minister of Agriculture. One deputy from Puno joined the group. Among others participating were the President of the Peruvian Indian Institute and the Cornell Peru Project Co-Director, Dr. Carlos Monge Medrano; the Dean of the Lima College of Attorneys; the Dean of the Faculty of Letters of the University of San Marcos; and officials of the International Labour Organization.

The trip was planned so that the participants might learn at first hand the achievements of the Cornell Peru Project and conditions in the Callejón de Huaylas. In addition, it sought to "demonstrate before the conscience of the entire country that the epoch of forgetting, misleading, and abandoning its Indian inhabitants had ended, and Peru was determined to confront its destiny, mounting a gigantic effort of governors and governed" (Velasco N. 1957:226-227).

1958. Vicos school children paraded in Carhuaz, the provincial capital, for the first time, during the Independence Day celebrations. Thus they joined the Mestizos of the province in this annual patriotic event (Vázquez 1959:235).

1961. The Prefect of Ancash Department, Don Manuel Octavio de la Jara, journeyed to Vicos on 29 June to swear in the community council delegates elected this year. He was accompanied by the departmental commander of the national police, the presiding judge of the departmental courts, and other notables from Huaraz (Dobyns 1961:2).

1962. The Governor of Marcará District, Don Manuel Luna, swore in the delegates who took office on 1 September during the celebration of final Vicos independence, in terms of the purchase of the estate, which was completely legalized by President Manuel Prado Ugarteche on 13 July, three days before the armed forces deposed him in a coup d'etat (Dobyns 1962a:2-4).

Vicosinos numbered 25 registered voters in the Marcará District total of about 380.

1963. The Subprefect of Carhuaz Province, Señor Alberto Dammert Muelle Rizo Patrón, swore in the new Vicos councilmen on 13 July (Vázquez 1964:7).

Under the military junta which ruled Peru after President Manuel Prado U. was deposed days before the end of his term the previous year, the lists of registered voters were materially reduced, mainly by severe application of literacy tests. Vicos had 12 registered voters in the Marcará District total of 295 (Vázquez 1967:8).

The Coalition Ticket of the American Popular Revolutionary Alliance and the National Oddria Union included one Vicosino who failed of election (Vázquez 1967:11).

1966. When municipal elections were held in Peru again, Vicos had 28 registered voters, which gave it the largest single bloc of rural votes in Marcará District, where a total of 325 were registered, with 247 of these in the town itself (Vázquez 1967:9).

One Indian was nominated on the Coalition ticket, again in the final position -- an honorific nomination since the proportional system of election would prevent his election. Vicos secondary school students and teachers joined to set up an independent ticket with a Vicosino at the head of the list nominated for council seats, and he was elected under the proportional system (Vázquez 1967:15-20).

Rectitude

1951. There were only eighteen discharged soldiers and thirty-eight individuals with draft cards, indicating the lack of interest in civic and patriotic education on the part of the youths (Vázquez 1959:238).

1952. The Cornell Peru Project's Peruvian anthropologist began exhorting young Vicosinos to comply with Peru's compulsory military service law instead of avoiding it.

1953. Vicos militiamen continued receiving military instruction and participated in sports competitions in Carhuaz on the "Day of the Militia," winning the marathon (Holmberg 1953:164).

Vicosinos volunteer for military service without being ordered to do so by the authorities and comprised 20 percent of the conscript contingent enlisted for the province. This change reflected exhortation by the new school teachers as well as Cornell Peru Project personnel (Blanchard 1953:157).

1954. An experimental literacy campaign was begun with the reservists, taught by two teachers from the province.

For the first time in Vicos, Peruvian Independence Day was celebrated, with the participation of the militiamen, the teaching staff and students of neighboring schools, and the people in general (Blanchard 1955:279).

The Cornell Peru Project and school teacher campaign to persuade Vicos youths to volunteer for conscription continued to work. Eleven recruits were accepted as physically fit and joined the Peruvian army. The Project hired a former sergeant in April who took charge of militia instruction (Blanchard 1955:281).

1955. All the young Vicos men called for military service appeared without urging from the military authorities. Twelve of them were judged fit for service, along with four volunteers.

Sunday drilling of militiamen continued under the direction of the former sergeant hired earlier, with sixty men involved. They also studied reading and writing for an hour and a half. Militia and conscripts participated in ceremonies for the end of the Military Year in the provincial capital, where they swore allegiance to the national flag.

Militiamen also took part in Vicos festivals, attending mass and marching in procession as an organized group (Blanchard 1956:211).

1957. The Vicosino was proud of his military program (Mongé & Vázquez 1957:31).

1958. There were 102 soldiers discharged from the army and 96 young reservists distributed between the classes of 1952 and 1958 who had their own draft cards. No one evaded obligatory military service (Vázquez 1959:238).

A military instructor had in his charge the task of civic, patriotic, and military education.

1963. Cornell Peru Project census enumerated 102 army veterans in Vicos (Alers 1965:439), suggesting a significant emigration of such individuals between 1958 and 1963.

Affection

1951. Aside from village festivals, there were no recreational activities other than conversation, and the people engaged in no sports.

1952. Up to this time, the recreational aspect of our program had suffered from a lack of personnel and facilities. The initial experiments in this respect indicated that it could be developed as one of the most significant dimensions of the program. Recreational facilities would be greatly improved when the new school was completed, since one of the main units of the building was to be an auditorium which we planned to use as a community center for moving pictures, theater performances, musical programs, etc. There would also be adequate space for athletic exercises (Holmberg 1952:244).

The Vicosinos experienced moving pictures for the first time, thanks to the facilities provided by the United States Information Service, which had one mobile unit for all Peru. A survey after the projection of the pictures indicated that 90 percent of the people had seen them and that there had been an audience of around 600 individuals who were completely happy with the program shown and expressed their desire to have a weekly function. We thought that this means could be extremely useful for developing our program in Vicos, and if the profits from the estate were sufficient, this year we planned to purchase projection equipment so that films could be shown in the school and for recreational purposes (Holmberg 1952:244).

1953. Taking part in the Carhuaz Province celebration of "Militiamen's Day," Vicosinos won the first three places in the marathon race. The Cornell Peru Project encouraged sports competitions against sports clubs of the province (Holmberg 1953:164).

1955. A playground for the school was leveled from the valley slope and walled with stone and sun-dried bricks (Blanchard 1956:207).

1957. Vicosinos took pride in their sports competitions (Monge & Vázquez 1957:31-32).

1958. The Nuclear School staff organized a "Vicos Educational Theater," which staged two performances. Educational moving pictures loaned by the U. S. Information Service were shown (Vázquez 1959:252).

Vicos had a soccer team made up of teachers and pupils (Vázquez 1959:238).

1959. The club union Magisterial Vicos was founded. It was made up of the personnel of the nucleo, the central school, the Ancash Program, and the Cornell Peru Project. It encouraged sports and friendly relations with neighboring communities.

1960. A club was organized for fifth graders, with officers elected in a general class election. It met biweekly, with no teacher present, and planned class activities.

1961. Soccer continued to be the favorite team sport of Vicosino youths, although a few joined in volleyball contests in the evening between teachers and Cornell Peru Project staff. Basketball had fallen by the wayside, but rolling hoops made from tire inner beads and shooting marbles were seasonal fads.

1962. Peace Corps volunteers began to make rag dolls and to instruct Vicos women how to make them.

1963. Peace Corps volunteers taught beginning school children in one sectional school to play with beanbags and other simple toys they could make for themselves.

A group of young Vicosinos organized a band which played for the first time at a festival.

1964. The young people working in the forestation program formed a soccer club called the Club Comunal Vicos.

They played matches with the neighboring communities of Quinranca and Huapra.

1965. The members of the "Club Comunal Vicosino" played soccer against teams from nearby communities. In March to May they began to wear cleated soccer shoes for the first time (Vázquez 1966:5).

1966. Following the death of Cornell Peru Project Director Allan R. Holmberg, young men of Vicos who had been to secondary school founded the Holmberg Memorial Library in what had formerly been a Cornell Peru Project apartment. Besides serving as a library and a business office for handling community correspondence, the area functioned as a species of club for the men who had been to school and had interests in common that differed from those of the nonliterate members of the community.

Well-Being

1951. The children did not eat basic foods such as milk, eggs, greens, and fruits because these were considered to be products for sale or barter. The diet of the adults was limited and not varied, since the work system obliged them to carry to work cold, dry food in small quantities (Vázquez 1959:240).

Women crushed grain with a stone pestle on a milling stone, with gourd dipper and ceramic water olla at the side to moisten it. Men chewed coca, putting lime in their mouths from a gourd container. At family meal time people ate from gourds.

1952. The Cornell Peru Project Director launched a hot school lunch program which helped to increase attendance to sixty youngsters and provided them with a significant nutritional increment (Holmberg 1952:243).

1953. The Department of Nutrition in the Peruvian Ministry of Public Health and Social Welfare carried out a survey of Vicos (Holmberg 1953:162).

The Cornell Peru Project continued providing school pupils, both boys and girls, with a hot school lunch, using menus worked up by a dietitian with the Department of Nutrition of the Ministry of Public Health and Social Welfare (Blanchard 1953:156).

1954. The kitchen of the new wing of the Vicos school was used for the first time (Blanchard, 13 April 1954, No. 872) for the lunch program continued by the Cornell

Peru Project with produce raised at Vicos. Menus prepared by a SCIPA nutritionist were being used (Blanchard 1955:279).

1955. The Ministry of Public Health and Social Welfare made available to Vicos upon application by the Peruvian Indian Institute a supply of powdered milk from UNICEF. Reconstituted milk was distributed to mothers and infants (Blanchard 1956:205).

The Cornell Peru Project continued to provide a hot lunch to school pupils, supplemented with reconstituted UNICEF milk (Blanchard 1956:207).

1956. An analysis of roentgenograms of the left hand of Vicosino boys showed a lack of increased bone density in later teens compared to that found in a group of U. S. white boys of similar ages. This was probably due to lack of calcium in the diet (Schraer and Newman 1954).

A third dietary survey showed improvement over the first two in July and February, 1953. Potatoes were consumed during six months instead of one; consumption of calories, vitamin A, niacin, and vitamin C were increased. Only per capita intake of thiamine had decreased (Alers 1965b).

The Cornell Peru Project in July conveyed to the Vicos prevocational school twelve hectares of agricultural land to be planted for the benefit of the school lunch program and other school needs (Vázquez 1957:224).

1958. Dr. Marshall T. Newman of the Smithsonian Institution launched a long-range study of growth and nutrition. With a grant from the Arthur Morris Foundation, he took over the supervision of the hot school lunch program, helping to purchase foodstuffs and adding vitamin supplements (Vázquez 1959:233). The Ministry of Public Health and Social Welfare continued to provide powdered milk. The community farm enterprise and the school farm contributed local products, including potatoes, maize, quinoa, wheat, and vegetables (Vázquez 1959:235).

Through the hot school lunch program, the students had learned to relish milk prepared in various forms and other foods like eggs, greens, and fruits. Likewise, fundamental changes were taking place in the diet of the students, motivated by the change in the labor system, the intensification of the cultivation of potatoes, the new economic returns, and the people's increased contact with the outside world (Vázquez 1959:240).

1959. The students showed greater acceptance of the special diet offered through the school lunch program.

1962. Dr. Marshall T. Newman reported that the mean weight gain of school boys consuming the free school lunch had amounted to 19 percent to 53 percent, depending on the number of years each boy has eaten the school lunch (Dobyns 1962b:8-9).

Wealth

1951. In the event of a crop failure, a Vicos serf who had no seed with which to plant the following year could obtain it through a form of credit. Merchants in Marcará would advance a Vicosino seed in return for the same amount returned from the harvest plus half of the remaining harvest.

The most important form of credit available to Vicos serfs was social and was based firmly on labor exchange. The handful of wealthy serfs usually required no monetary credit, since their ownership of livestock permitted them to sell one or more animals for cash when pressed for money. The great majority of poor serfs could obtain credit from the wealthy livestock owners to a limited extent by promising to repay the amount advanced and by placing themselves in the personal service of the creditor as long as they remained in debt.

1952. The Cornell Peru Project offered serfs new seed potato varieties at cost, with fungicide and insecticides to protect them and guano to fertilize them. The serfs pleaded lack of funds with which to make the purchase. The Project initiated a credit-in-kind program patterned after local sharecropping arrangements. The manor advanced to cooperating serfs the seed, fungicide, guano, and insecticide to plant the area the farmer prepared. Instead of recovering its seed investment before dividing the crop, as was local Mestizo custom, the Project divided the harvest equally, allowing the farmer first choice of which half he wished. The Project also insisted upon strict supervision of cultivation and harvesting to insure that the serfs learned the new farm practices and followed them (Vázquez 1955).

While 40 serfs signed up for this credit program, only 17 actually participated through the season (Holmberg 1953: 163).

1953. When the Cornell Peru Project offered credit in kind again under the same sharecropping arrangement, 85 Indian farmers participated in the crop-loan program. Some of the first year's dropouts took part in the second season's program.

1954. The Cornell Peru Project, with an experimental aim, granted credit in kind to 173 families, in order to encourage the cultivation of potatoes and to improve the economic level of the colonos (Vázquez 1959:239).

1955. The form of the agricultural improvement campaign changed, using a system of agricultural credit, loaning improved seed, insecticides, and guano, and requiring the return of this value in cash. This greatly stimulated the sale of potatoes among the 72 farmers who volunteered for the experiment and accepted the conditions of the contract. This appeared to have brought about change, as it obliged the Vicosinos to learn some elements of the system of selling agricultural products (Blanchard 1956:209).

1956. A community fund administered by the Community Council was created by convincing each head of household officially inscribed as a peon to contribute about \$10. Some \$4,000 was raised. It was drawn upon to pay the rent of the manor while the remainder was held as a reserve for down payment on manor lands (Holmberg 1959:8). Each family head contributed S/. 200 to this community capital (Vázquez 1959:232).

In October, the Cornell Peru Project loaned the new Community Council funds with which to purchase seed potatoes and to carry on the other operations involved in launching a community farm enterprise (Vázquez 1957:223).

1957. From its communal funds, Vicos granted a supervised type of credit to the communities of Recuayhuanca and Llipta, so that they might intensify their cultivation of potatoes. The directors of Vicos and the engineer of the central school supervised the farming (Holmberg 1959:9; Vázquez 1959:240). This operation showed a profit but was terminated by the supervised credit program officials to keep Vicos capital under control (Vázquez 1959:234).

The "Vicos Rural Supervised Agricultural Credit" system was founded in Vicos with financing from the Peruvian Agricultural Development Bank and technical assistance from the Interamerican Cooperative Food Production Service. The bank authorized a loan of S/. 180,000 to the ten delegates

on the Community Council as a crop loan to raise 30 hectares of potatoes (Vázquez 1957:223). This was the bank's first collective and individual supervised credit program in Ancash Department (Monge & Vázquez 1957:31), amounting to approximately \$7,000, for which the delegates were personally responsible (Holmberg 1959:9). Actually, Vicos earned S/. 137,072 profits (Vázquez 1959:249).

Community profits realized on the previous season's potato crop which was produced with a Cornell Peru Project crop loan, were utilized to provide community credit to farm families in 1958 (Vázquez 1957:223).

1958. The Peruvian Agricultural Development Bank authorized a new crop loan of S/. 250,000 to Vicos for the cultivation of 50 hectares of potatoes under the supervised credit program. The Interamerican Cooperative Food Production Service operating that program dispatched fifteen of its trainees for an eighteen-day training period in Vicos (Vázquez 1959:233).

Ing. Carlos Cheuca Sotomayor supervised the Vicos credit program through Extension Agent Carlos Earromeque in Huaraz, who paid weekly visits to Vicos, and through Ing. Manuel Vise, the agriculturalist attached to the Nuclear School staff (Vázquez 1959:234).

The Community Council extended limited credit to 50 farm families, the largest loan being S/. 2,183 (Vázquez 1959:239).

1961. The community had built up its inventory of seed, fungicides, insecticides, fertilizer, machinery, and cash in its checking account to the point where it needed to borrow only a few thousand soles from the Agricultural Development Bank to finance its 1961-62 crop (Dobyns 1961:2).

1962. Loans from Vicos to surrounding communities had made Vicos a leader of Indian communities in the region. Acceptance of the Project at the community level had led to acceptance in the neighborhood and a leadership position for Vicosinos which they had not held previously (Dobyns, Monge & Vázquez 1962:112).

The community farm enterprise realized a net profit of approximately S/. 183,000 on the 1961-62 potato season, shipping forty-two truckloads of potatoes to the Lima wholesale market for gross sales of S/. 334,731.57 (Dobyns 1962a:4).

Vicos paid down S/. 500,000 for its lands and had sufficient funds in the bank to purchase a new heavy-duty Ford truck. Loans financed the remainder of its land purchase cost. The Peruvian government provided S/. 1,000,000 for twenty years at no interest, and the Public Charity Society of Huaraz agreed to accept the balance of S/. ~~500,000~~ in three annual installments.

1963. The harvest from the 1962-63 potato crop was reduced by freezing conditions, but the price was high because of general scarcity produced by these conditions, so the community farm enterprise fared well.

The community obtained credit of S/. 200,000 for the 1963-64 agricultural campaign (Doughty & Vázquez 1964:1-3).

A total of S/. 60,000 in credit was extended to 254 heads of families (more than in any other year) for the cultivation of potatoes (Doughty & Vázquez 1964:5).

In October, the Junta Directiva de la Cooperativa Comunal de Credito de Vicos was installed. It was to serve Vicos and some neighboring communities. It was the only one of its type in the Province. It began with S/. 5,000 in capital and gave indications that it would grow rapidly (Vázquez 1965b:11).

1964. Because of a bank strike, the crop loan arrived only in August, delaying the planting and making it impossible to utilize loan funds for individual credits. Community capital was invested in fertilizers in order to get the initial plantings in (Vázquez 1964:7).

1965. The Peruvian Agricultural Development Bank made Vicos a S/. 300,000 crop loan for fertilizer and individual crop loans within the community (Vázquez 1966:8).

Skill

1951. Cows were staked with ropes in the field to fertilize it. The Vicosinos, despite their familiarity with insecticides and guano from the offshore islands, did not use them.

The colonos received neither technical assistance nor aid for improving their farming. The potato, the principal commercial product of the region, produced a low yield in the Hacienda's economy, approximately 4,000 kilograms per hectare, and the colonos had almost abandoned its cultivation because of ignorance of ways to combat diseases of the plant.

1952. A large area was prepared for seed beds to grow new plants, not locally cultivated, to be distributed to Indian homes. Stone terraces were built for erosion control in an area covering about twelve acres. The Interamerican Cooperative Food Production Service's agronomist resident in Huaraz devoted one day each week to advising the Vicos staff on crop rotation, fertilization, reforestation, stock upbreeding, pasture improvement, etc. (Holmberg 1952:242-243). Cuzco white maize was tested and found to yield well.

The Cornell Peru Project launched a credit-in-kind program couched in sharecropping terms. Forty serfs signed up, and seventeen finally participated (Holmberg 1953:163) in this voluntary demonstration on serf subsistence plots.

The resident agricultural engineer in Huaraz of the Servicio Cooperativo de Producción de Alimentos spent one day a week at Vicos to direct agricultural improvements such as crop rotation, fertilization, reforestation, introduction of better varieties of seeds, development of pasture lands, improvement of cattle-raising, introduction of insecticides, etc. (Holmberg 1952:242).

1953. There was an increase in the number of people volunteering to participate in the experiments in agricultural innovation. The number grew from 17 the first year to 87 the second (Holmberg 1953:163).

No fewer than 180 Indians sought participation in the third season's program (Blanchard 1953:157).

Observation of results of experimental planting in Delfino's checra: One corner planted in conventional potato seed, the remainder in seed provided by the Hacienda and treated with insecticide and the soil with guano de la isla. A striking difference was observed. The corner planted in conventional seed had only meager sprouts, while the remainder had much larger plants (Wellin 7 Aug. 1953, No. 241).

1954. Limitations on Cornell Peru Project personnel forced the Project to cut participation in the third season's credit program to 158 Indian subsistence farmers. Others who could not be enrolled copied the farm practices being taught. Several groups of farmers banded together to purchase guano, and potato production rose again. Some Indian farmers began to sell surplus production for cash for the first time since the Cornell Peru Project intervention began (Blanchard 1955:281).

1955. Agricultural lands adjoining the school were placed at its disposal for the agricultural technician's use in teaching. Several fathers of schoolboys voluntarily brought their oxen to plow the student orchard and vegetable garden (Blanchard 1956:207).

The Cornell Peru Project converted its credit program from a sharecropping system to loans in kind but required cash repayment. The number of farmers participating fell to seventy-two, but the experience of making extensive cash produce sales apparently greatly stimulated interest in understanding the produce market outside Vicos. Farmers not enrolled in the program continued to apply to their fields the knowledge they had gained in previous years.

The Ministry of Agriculture presented Vicos with a hand-powered threshing machine (Blanchard 1956:209).

1957. The Cornell Peru Project sharecropping credit and agricultural extension program raised the value of potato production per hectare from S/. 2,000 to S/. 8,000. The Peruvian-U. S. Binational Cooperative Interamerican Agricultural Production Service proposed to produce at least S/. 12,000 per hectare (Monge & Vázquez 1957:29).

The first year's collective farming results were striking. Potato production rose over 100 percent. Increased productivity was reached with only about one-third the number of man-hours worked; some individual plots (data not all analyzed) showed over 100 percent production increases. The value of the crop was over \$15,000. A loan of \$7,000 was easily paid back (Holmberg 1959:9).

Vicosinos purchased fifteen tons of guano to apply to their own fields (Vázquez 1959:239).

1958. Maize program personnel from the National School of Agriculture tested new varieties of maize at Vicos (Vázquez 1959:233).

Because of a price rise, Vicos farmers purchased eight tons of guano for use on their own fields, not much more than half the amount bought for the year before.

Production reached 10,700 kilograms per hectare on community farm enterprise fields and 12,000 on some individual fields (Vázquez 1959:239).

1964. Sixty-five percent of the Vicos families sold potatoes from their own fields through the community farm

enterprise marketing system and earned an average income of S/. 1,000, equivalent to \$37.50, from this source alone. They marketed other tubers locally. These Indians subsisted largely on the quarter of the gross community potato production graded as too small for market (Vázquez 1965b:11).

Vicosino gardeners appeared to employ their own labor on their garden plots somewhat more efficiently than the community farm enterprise employed it on the commercial fields. There was evidence that crop yields per hectare were declining. The second-grade guano applied to Vicos fields appeared to improve crop yields more than the more finely ground top (and more expensive) grade.

Vicosino gardeners appeared to have abandoned the use of insecticides in growing potatoes. Successful crops were being produced in the absence of serious mosaic disease in the area.

Enlightenment

1951. Vicos had a small school building which served as quarters for the single teacher as well as a classroom. Daily attendance fluctuated between ten and fifteen students (Monge & Vázquez 1957:28).

Three persons, two of them outsiders, read and could write, four could sign their names, and a total of twelve were bilingual (Vázquez 1959:238).

1952. With the help of the Vicosinos new desks were built. Notebooks, pencils, chalk, serving equipment for the school lunch, soccer balls, and other articles were purchased with manorial funds (Holmberg 1952:244).

The serving of a hot lunch could have been responsible for the increase in enrollment from twenty to sixty pupils, even though the school building was delayed by rain (Holmberg 1952:243).

Arq. Gustavo Tode of Lima drew up the school building plan. Dr. Raymond Gibson of the Interamerican Institute advised the Cornell Peru Project staff on educational policy. The winter rainy season delayed planned sun-dried brick and tile manufacture so that the new building the staff hoped to have in use by May was then only under construction (Holmberg 1952:243).

1953. Construction was completed on the first part of the new school, which includes offices, a library, and three

classrooms. Costing approximately S/. 70,000, this wing was dedicated on July 20 by the Minister of Labor and Indian Affairs, General Armando Artola del Pozo (Holmberg 1953:162).

When the construction of the first wing of the new school was completed, the Peruvian Indian Institution petitioned the Ministry of Public Education for a higher classification for the local school. In April, that Ministry divided the coeducational school into a First Class Boys' School and First Class Girls' School. It dispatched two trained teachers for the former and retained the local teacher for the latter (Vázquez 1965a:57). The government also provided twenty desks to augment the furnishings made by the Cornell Peru Project (Holmberg 1953:163).

School enrollment reached 123 children out of an estimated school-age population of 350 (Holmberg 1953:162). Daily attendance reached a maximum of 90 pupils (Blanchard 1953:156), an increase of 50 percent over the previous year.

1954. The boys' school in Vicos was raised by the Ministry of Education to the category of a rural prevocational school, making possible technical instruction of the students and an increase in teaching personnel. The Ministry of Education sent another assistant and an instructor in carpentry. The girls' school still had only one teacher (Vázquez 1965a:59).

Construction of the second part of the new school was completed. It included an auditorium, a dining hall, a kitchen, four classrooms, and workshops. A water system was installed for the use of the kitchen and for purposes of the students' hygiene (Blanchard 1953:156; Blanchard 1955:277).

This gave Vicos the best school plant in the region, with a capacity of 400 students (Monge & Vázquez 1957:28). The new school and improvement program began to attract the attention of school teachers elsewhere in the Callejón de Huaylas. They began organizing excursions to visit Vicos, so the local students began to lose their fear of outsiders and to pay return visits (Blanchard 1953:156). In July the boys' school was elevated from a First to Second Grade School and a few days later was reclassified as a Prevocational School. This action added two teachers to the staff (Vázquez 1965a:59), one academic and one master carpenter who arrived in October.

May Kedney of Skidmore College spent July and August stimulating interest among beginning Indian students with visual arts (Blanchard 1955:277).

The Cornell Peru Project reached a decision to pay teachers by session and also to give them a stipend in return for cooperation with the Project in giving honest reports, records, etc. (Blanchard 11 June 1954, No. 875).

Enrollment climbed to 127 boys and 33 girls, while average daily attendance was 80. There were three transition sections and one first grade in the boys' school. Twenty-three boys passed the first grade course. All the girls were in transition sections (Blanchard 1955:279).

1955. The Cornell Peru Project reached a decision to give teachers some kind of recognition or reward if they taught 25 people to read and write in a year (Blanchard 15 June 1955, No. 875).

The Cornell Peru Project employed three literate Vicosinos (Blanchard 1956:211).

The Ministry of Education added the posts of industrial technician and agricultural technician at the Vicos school, and these teachers began work at mid-year (Blanchard 1956:205). A janitor was added to the school staff.

Average daily attendance reached 100 students. The boys attended second and first grade and two transition sections, but the girls all remained in transition. Pupils began to come to the Vicos school from neighboring villages. The pupils accepted responsibility for supplying firewood for the school lunch program (Blanchard 1956:207).

1957. On July 1, the Vicos Nuclear School was created, serving not only Vicos, but also the Marcará River Valley. The rural prevocational school of Vicos acquired the status of Central School of the Nucleo Escolar (Vázquez 1957:224).

Nine teachers occupied quarters in the building erected by the Cornell Peru Project and the Vicosinos. Average daily attendance varied between 160 and 180 speaking and writing Spanish. Technical instruction was offered in agriculture, carpentry, and metal-working, and the school ran a barbershop (Monge & Vázquez 1957:28).

A kindergarten was requested by the prevocational school teachers and was authorized. Vicos Nuclear Peasant School posts were authorized for the Principal and four technical supervisors. This made the Vicos prevocational school the Central School in the Nuclear Peasant School complex (Vázquez 1965a:59).

The Nuclear School was in charge of a principal. It was a prevocational school for boys with three teachers and four technicians. The girls' school was in charge of one teacher (Vázquez 1957:224).

During the school year, educational films were shown weekly in the auditorium of the Central School. The teachers also presented dramatic programs with patriotic themes. Sports practice was introduced, primarily soccer. Vicos had a soccer team made up of teachers and students.

The kindergarten was suspended for administrative reasons (Vázquez 1965a:59).

Vicos Central School enrollment reached 184, with 156 students from Vicos, 17 of them girls. Forty-six percent of the students were in the transitional year (Vázquez 1965a:63). Average daily attendance varied from 165 to 170; 90 percent of the students were boys (Vázquez 1959:237).

1959. The girls' school was combined with the boys' prevocational school re-introducing coeducation at the lower levels of schooling. Thus, the Central School operated with four academic and three technical instructors under one principal; five grades and two transition sections were taught. Only 9 percent of the female school-age population was enrolled, and there was a daily attendance of 10 to 12 girls (Vázquez 1965a:59).

Only 6 percent of the female school-age population was enrolled in school, a total of 15 girls (Vázquez 1965a:63 and Alers 1965:441). Enrollment reached 196 students, of whom 167 were Vicosinos. The proportion in transition fell to 42 percent (Vázquez 1965a:62).

1960. The first Vicosino in known history ever to attend a secondary school matriculated in the National Secondary School in the provincial capital of Carhuaz (Holmberg & Dobyns 1962:109).

Sewing classes, which were started for women by the Cornell Peru Project, aimed at helping Vicos women become accustomed to the idea of attending class, with the goal of eventually increasing the proportion of school-age girls in school.

1961. Parents locked the teachers out of the Vicos Central School at the beginning of the term in a protest aimed at obtaining the transfer of the principal to another post. Six delegates were dispatched to Lima to the Ministry of Public Education to seek the same goal. These events symbolized general adult acceptance of the value of formal education.

Two more boys who had graduated the previous year went to secondary school in Carhuaz, one on a scholarship won on the basis of his grades in the Vicos Central School.

The success of Felix Urbano Sánchez in the Carhuaz secondary school also inspired a number of former dropouts to return to the fifth and final grade of the Vicos Central School. As a result, fifth grade attendance exceeded that of the fourth and third grades (Holmberg & Dobyns 1962:109).

The value of ability in Spanish for communication and interaction with other Peruvians was generally recognized. A question-and-answer system, which had been established in classes, encouraged students to do more original thinking.

1962. Inter-university Summer Program students from the United States gave instruction to Vicos secondary school students in the English language. The main burden of supplementing instruction for students of the Vicos secondary school was borne by the Field Director, Dr. Mario C. Vázquez, and his wife. Since Spanish was still a second language for the Vicos students, they were handicapped in their studies. Therefore, the primary Cornell Peru Project effort was aimed toward perfecting their Spanish (Dobyns 1962a:20). The pioneer Vicos secondary student stood seventh in a class of thirty-eight students in the third year, while Octavio Coletto stood sixth among twenty-six in his first-year section, and Enrique González started out twenty-second among thirty-four (Dobyns 1962a:21).

1963. Two new schools under the jurisdiction of Vicos were opened, one in the Ullmay zone and another in the Wiash zone.

The Wiash school resulted from cooperation between a U. S. Peace Corps volunteer and neighborhood parents. The youngsters living in this zone near the Marcará River were reluctant to walk to the Central School, fearing physical aggression from older students. Yet their parents wanted them to attend school. So they refurbished a sun-dried brick house as a school, and the Peace Corps volunteer taught classes with the assistance of the best-educated Vicos girl.

Average daily attendance ran from twenty to twenty-five pupils, about 10 percent of the attendance at the Vicos Central School with its upper grade pupils from other settlements (Dobyns, Doughty & Holmberg 1965:71-72).

The Ullmay school resulted from expansion of the Peruvian Ministry of Public Education program in the area and was staffed by a Peruvian teacher.

1964. The first Vicosino to enter secondary school graduated fifth in his class of twenty-seven, which consisted mostly of Mestizos (Doughty 1965:16).

1965. The pioneer Vicos student entered the National Normal School located at Tingua; north of Vicos in the Callejón de Huaylas, in April.

Another Vicos youth who went to a special secondary-normal school at Jaén completed his studies there in December.

1966. The Jaén secondary-normal school graduate began teaching at Vicos as a substitute teacher in June. In August he was named to the regular teaching staff of the Vicos school, receiving the highest monthly salary paid any Vicosino up to that time.

In December, Octavio Coletto completed secondary school at the Carhuaz national high school (Vázquez 30 Agosto, 1967).

APPENDIX A

Excerpt from Harold D. Lasswell and Allan R. Holmberg, "Toward a General Theory of Directed Value Accumulation and Institutional Development," in Hollis W. Peter (ed.), Comparative Theories of Social Change (Ann Arbor: Foundation for Research on Human Behavior, 1966):

THE CHOICE OF VALUE-INSTITUTION GROUPINGS

The general model that we propose uses eight categories for the purpose of distinguishing the principal value-institution groupings in social process. It need scarcely be said that there is no magic about the number eight. The choice was made with several considerations in mind. First of all, an inclusive list of terms is required in order to foster the comparative study and management of any social context. Unless an inclusive list is employed to report observations, it is impossible to establish equivalencies among observational fields, or among equally inclusive, though different, lists. We note, second, that a short list is required, since the number of specific outcomes sought is an unwieldy total. For instance, thousands of words are necessary to designate the articles on sale in a supermarket or the items of food and clothing in a given culture.

A third point is that the principal value-institution categories are especially convenient if they can be closely related to the several branches of specialized knowledge in the sciences relating to social process. It is evident that our terms refer to sectors of society that are investigated by readily discernible groups of scholars. The power value and the institutions of government are the province of political scientists, students of international relations and jurists. The enlightenment value and institutions of communication and inquiry are studied by professors of journalism and others. The wealth value and economic institutions are the economist's concern. The well-being value and institutions of safety, health and comfort are investigated by social biologists and public health workers. The skill value and institutions of pedagogy and of occupational and professional standards are objects of research by educators and occupational sociologists. The affection value and institutions of friendship, family and loyalty come within the domain of anthropologists and sociologists of family and kinship structures. The respect value and

institutions of caste and class fall within the scope of anthropologists and sociologists who deal with social structure. The rectitude value and institutions are the province of scholars of comparative religion and ethics.

Value outcomes are culminating events in the never ceasing interplay among participants in the social process. Power outcomes are the giving (and receiving), the withholding (and rejecting) of support in matters of community-wide concern. Enlightenment outcomes are the giving (and receiving), the withholding (and rejecting) of information about the social and natural context. Wealth outcomes are the giving (and receiving), the withholding (and rejecting) of claims to processed and unprocessed resources. Well-being outcomes are the giving (and receiving), the withholding (and rejecting) of opportunities directly affecting safety, health and comfort. Skill outcomes are the giving (and receiving), the withholding (and rejecting) of opportunities directly affecting the acquisition and exercise of proficiency in the performance of teachable (and learnable) operations. Affection outcomes are the giving (and receiving), the withholding (and rejecting) of intimacy and loyalty. Respect is the giving (and receiving), the withholding (and rejecting) of recognition. Rectitude is the giving (and receiving), the withholding (and rejecting) of characterizations of conduct in terms of responsibility (religious, ethical).

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