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3. AUTHOR(S)
 Macridis, R.C.; Meehan, E.J.

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ATTITUDES, COGNITION SKILL, PARTICIPATION AND ACHIEVEMENT

A report submitted to the
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Principal Investigators:

Roy C. Macridis, Brandeis University
Eugene J. Meehan, University of Missouri, St. Louis

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INTRODUCTION

AID contract ced-824, as amended 11 April, 1968 and 10 June, 1969 provides support for a multidimensional inquiry into the attitudes, value systems, and behavior of youth in the developing nations. It was agreed when the contract was amended that the prime focus of the study would be an evaluation of the impact of AID-sponsored training programs on the attitudes and behavior (participation) of Latin American trainees. Field research was carried out in Guatemala, C.A., in 1968 and 1969. A report of findings dealing with the impact of training was submitted to AID late in 1969. The present report deals with a further inquiry in Guatemala that is a direct outgrowth of the preliminary study.

Very briefly, our study of the impact of training on Guatemalan nationals indicated that the training did produce significant changes in attitudes considered relevant to development, that participation by trainees in community affairs increased significantly, and that the individual derived substantial benefits from the training programs. But the data also suggested that benefits to the community at large were marginal, that expressions of values tended to remain at the verbal level and were not translated into performance, and perhaps most important, that the value structure of the population as a whole already incorporated (verbally, at least) most of the attitudes and values considered essential for national development - training might serve to reinforce these attitudes and values but it did not create them de novo.

The implications of these findings are extremely serious, viewed in terms of the usual approach to development advocated by academic experts. For they suggest that the major goal of development training is not a transformation of tradition-oriented peoples into developmentally-oriented peoples; that changes in attitudes and values could not suffice to produce development. And, since underdevelopment is not merely a question of adequate resources (although the poverty of the underdeveloped

nations is stark and brutal, but the differences in achievement in common situations implies very significant differences in the competence—with which resources are used) and suitable attitudes, , we were led to search for other dimensions of the situation in the underdeveloped nations that might account for these differences. Responses to the preliminary questionnaire used to study the impact of training suggested that one major factor could be the absence of critical capacity within the population, for the responses we received to our questions were singularly deficient in what might be called an "engineer's approach" to the environment - tentatively labeled "cognitive skill." Since all of these factors appeared very clearly in the preliminary stages of the study when the prime concern was training the interviewing crew, a few additional questions were incorporated into the questionnaire that served to test, in a very primitive way, the "cognitive skill" of the individual respondents. Because the primary focus of the investigation lay elsewhere, only four dimensions of cognition were included in the first questionnaire: (1) temporal - capacity to associate or relate change over time; (2) analytic - ability to break complex tasks into component elements; (3) synthetic - ability to produce patterns of relations focused on some specific factor or event; and (4) calculation - ability to spot non sequiturs and calculate implications or inferences properly.

While the results obtained with the first questionnaire were inconclusive, the questions provided a useful discriminator of environmental performance in a population that was fairly homogeneous with respect to educational and work experience. A strong relation between skill level measured on our crude indicators and performance that was relevant to national development and efficient in terms of the situation where it occurred was apparent even on casual inspection. At the very least, the data provided ample justification for further inquiry. Concurrently, theoretical and methodological developments made within the context of the study suggested that broadening the focus of inquiry to include more than the affective or attitudinal dimension of behavior was essential; that broadening, clearly, should introduce an element of reality control

or critical capacity based on performance rather than assertions of intentions or values. The conceptual framework used in the study was, in effect, transformed from a psychological base, using psychological concepts based on the individual's internal structure of attitudes, etc., to a methodological base, using concepts relating to the analytic properties of the individual's output or performance. By focusing on performance, analyzed in methodological terms, powerful criteria of adequacy or quality could be brought to bear on behavior, and on the design of training programs intended to modify behavior in ways meant to produce societal change.

By late 1969, a four-step program of inquiry and experimentation based on methodological conceptions of the cognitive dimensions of behavior had been prepared that would serve to test that orientation to the problems of education and training, whether in the United States or abroad. Unfortunately, the funds remaining in the grant after the study of AID-sponsored training was completed were not sufficient to carry out the proposed program, but a beginning has been made and some of the work is now under way under other auspices. The goal is not simply a demonstration of the relation between two sets of abstract factors but (1) to develop a set of instruments that can be used with confidence to predict success or achievement in the environment (however defined or specified) and (2) produce the materials and curriculum needed to improve deliberately the level of cognitive skill of various types of persons - illiterates, academics, workers of various kinds, and so on. The work must proceed in stages, for each step is contingent on its predecessors, upon what is learned by earlier study. Final results of studies begun in 1970, for example, will not be available before 1972 and the complete structure will take 6-10 years to develop.

(1) The first task, clearly, is to demonstrate persuasively the value of focusing on cognitive skill and to develop a more precise set of indicators for testing the cognitive skill level of individuals. That is the purpose of the present report. A measure of cognitive skill based on eight continua was administered to an elite group in Guatemala. The immediate goal was to determine the strength of

the relation between cognitive skill, measured in terms of the eight continua, and individual achievement (measured in terms of occupational success and participation in community affairs). By stabilizing the attitudinal structure of the population, we were also able to obtain some rough indication of the relative usefulness of cognitive and attitudinal measures as predictors of performance in the environment. The results of the interviewing, reported below, strongly support the assumptions on which the study was based. The same instrument is being used as a predictor of achievement on an experimental basis at the Inter-American Center at Loyola University in New Orleans through the courtesy and cooperation of the Director, Belmont Haydel, and his colleagues. A group of high-level Brazilian administrators was interviewed early in 1970; the results will be used to make projections that can be tested against actual performance in the field at a later date - hopefully, in early 1971.

(2) The second stage of the inquiry, also in progress, is directed to the development of a more precise set of definitions and indicators for the conception of "cognitive skill" employed in the study. Using external measures of performance or achievement (academic, occupational, etc.) various combinations of indicators can be tested for efficiency. The goal is a precise and compact instrument that can serve as a measure of progress for trainees and students and as a measure of performance for the schools and training programs that produce them. The value of an instrument of this kind can hardly be overemphasized; we must have some conception of educational output that is not limited to rote performance or capacity to recall information. Improved cognition skill could serve as a meaningful and defensible goal for education, and as a test of educational performance, if adequate instruments for measuring and for teaching can be created and made available. If, as we believe, improvements in cognitive skill are reflected in improved performance in the environment, we will have provided educators and trainers with a concrete meaning for the term "relevance" with reference to their own work that would be invaluable.

(3) The third phase of the program aims at the creation and refinement of the instruments and procedures needed to actually improve individual cognitive skill. We must show that the skill is teachable, and produce the instruments that make it possible to teach. Happily, the problem has been solved in principle; the indicators of cognitive skill that serve as a point of departure for the enterprise, already shown to be useful in our work in Guatemala, were extrapolated from the set of skills that is widely taught in university-level courses in methodology or the conduct of inquiry. That is to say that a conceptual framework in which the meaning of "cognitive skill" can be specified quite accurately in terms of performance or output is already available and need not be developed. Briefly, the quality of the descriptions, explanations, and evaluations performed by the individual in his interactions with the environment (which can be evaluated in well-established terms) is immediately contingent on what is referred to as cognitive skill. The structures and processes on which the quality of descriptions, explanations, and evaluations depends are well known and fairly precisely specifiable. What is needed, therefore, is an identification of the more limited and precise subclasses of actions involved in description, explanation, and evaluation that can serve both as indicators of cognitive skill and as foci for training intended to develop that skill. These points are developed more fully below.

(4) Finally, we must show that when cognitive skill is improved, behavior or performance also improves. It would be pointless to undertake elaborate training programs intended to produce skills whose acquisition has no demonstrable consequences. A regular program of testing in use is needed that will serve to refine and improve both the instrument and the performance of the individual over time. That is, we need to improve the precision of our specification of the meaning of cognitive skill and at the same time improve our capacity to teach them efficiently, or more accurately, our capacity to facilitate their acquisition.

THE CONCEPTUAL FRAMEWORK

A brief outline of the conceptual framework developed for, and employed in, the study will help to clarify the meaning of "cognitive skill" and indicate some of the reasons why it is considered essential for learning, innovation, development, or even human survival. If the goal of education and training, broadly conceived, is the creation of men who are able to cope with the environment in reasoned or intelligent ways, able to produce a reasoned and defensible criticism of their own and other behavior, the conceptual apparatus used to define the desired goals tends to determine the strategy and tactics employed to train or educate, and to test the efficacy of such training or education. The approach used here differs radically from those ordinarily used in education and training because it focuses on the analytic properties of the individuals output or behavior and not on the intentions, motivations, or procedures which presumably generated the behavior. In brief, the approach is epistemological and methodological (in the philosophic sense and not in the narrower sense in which it is used to designate the use of statistical and other manipulative techniques) and not psychological. What constitutes reasoned behavior is defined by reference to the relation between behavior, situation, and available knowledge, not by reference to intentions, psychic states, or psychological processes. There are excellent reasons for preferring the epistemological emphasis: first, the quality of human performance is always independent of the mode used to produce it; second, and more important, there are no explanations or theories available in psychology that have the breadth and specificity needed to serve as a foundation for well-designed education and training programs, while that gap can be filled methodologically. Granted immediately that attitudinal sets are a necessary element in the situation where learning or innovation or reasoned behavior is required, definitions of the situation that rely exclusively on such concepts are necessarily inadequate and partial. They cannot, therefore, provide an adequate basis for judging the quality of the human performance.

The inadequacy of the attitudinal approach to the explanation of behavior is most transparently revealed if we begin with an individual human seeking to cope with the environment (adapt to the environment; adapt the environment to his own purposes) and ask how the quality of his efforts can be assessed and improved. Good intentions without other forms of competence produce results that are qualitatively problematic; knowing the intentions, we have no reason to expect results that are either desirable or unwanted. One way of solving the problem is to identify the tools available for coping with the environment, and evaluate their application of use. If man can be given the available intellectual tools, taught to apply them intelligently, and hopefully, taught to apply them critically, and thus be able to refine and improve them, his potential for adapting to the environment, or coping with it, will have been maximized. Of course, there is no general box of tools that can be used by all men for all purposes, that can cope with every situation that may arise in the relation between man and environment. The search for such universal tools is as futile as the search for a single map that will satisfy every map user in every situation where maps are used. But a great deal is known about the structures and processes by which man responds to and modifies the environment, and about the ways in which those tools are modified and improved. That information, what is referred to as epistemology or methodology, can serve the same purposes for educating the individual as a course in map-making serves the cartographer - and the person who teaches cartography. There is no single skill that can be identified as "reasoned criticism," any more than we can identify some single skill in "management" and teach it in a business school. But the basic elements in reasoned criticism are the same, whatever the objects that are being criticized. And by specifying the situations in which the individual will perform after education and training, general processes can be reified and exemplified, thus providing the student with extremely useful models for further exploration. A methodological conceptual framework therefore provides the individual with a foundation on which a sound educational system can be constructed and the possibilities

of self-correcting behavior maximized. Men must learn to make a beginning from known assumptions, to pursue carefully defined goals, to calculate properly, and to correct their original assumptions, whether empirical or normative, according to experience gained through using them.

Analytically, the relation between individual and environment can be conceptualized in an enormous number of different ways. The value of any particular conceptualization, then, depends on the use that can be made of it, not its intrinsic properties. The simplest structure that can be used to specify the minimum requirements for reasoned, self-correcting behavior with reference to the environment construes every human action, including the act of doing nothing when the capacity to modify the environment is present, as a combination of descriptions, forecasts, explanations, and value judgments. In order to act, each of these elements must be present, or more precisely, every human action involves, analytically, each of these elements. The quality of the total action is directly dependent on the quality of the elements: if the descriptions, explanations, or value judgments are poorly contrived, the actions based on them will also be of poor quality, barring happenstance. The quality of individual actions, then, can be criticized by reference to the instruments employed and the conclusions reached with them. All that is required for criticism is a competent observer; criticism is contingent on the standards used by the critic and not on the intentions of the actor. Criticism of an action, in other words, depends on the standards used by the critic and those standards must be stated explicitly. Reasoned actions and reasoned criticisms of those actions are therefore exactly the same, analytically at least

While descriptions, forecasts, explanations, and value judgments do not exhaust all of the relations between man and environment (the environment includes other men, of course) nor do they exhaust human capacity to generate new concepts and use them to classify different kinds of human actions with reference to the environment, they do

1. For a full statement of the structure, see Eugene J. Meehan, Theory and Method of Political Analysis (Dorsey, 1966), _____, Explanation in Social Science (Dorsey, 1968), and Value Judgment and Social Science (Dorsey, 1969)

include all of the tools and instruments needed for fulfilling human needs with reference to the environment, hence what is involved in creating and cumulating what we ordinarily refer to as human knowledge. Briefly, man has an absolute need for knowledge that will permit him to: (1) anticipate changes that will occur in the future on the basis of present observations; (2) intervene in the environment to bring about different, alternative outcomes in a common situation; and (3) express preference from among those alternatives that can serve as a basis for behavior or action. Man's capacity to develop, use, modify, and adapt his intellectual tools to these needs in specific situations is what is meant by the term cognitive skill or capacity. The term is not identical with intelligence; the latter does not imply the shaping or direction of capacity that cognitive competence requires. Cognitive skill relates to intelligence in precisely the way that a computer program relates to the use made of a computer; one relates to potential, the other to performance. In this report, the focus is on product and not the process by which product is generated. While we speak of individual cognitive skill, that is not a characteristic of the individual but an analytic quality of the performance.

The emphasis in this report on the cognitive dimension of performance must not be construed to mean that the authors assume that other factors in human behavior are trivial or unessential. Cognitive skill is but one way of dealing analytically with the quality of human actions. We believe it is essential. But cognitive dimensions of behavior are not a sufficient basis for analysis. Men must be "motivated," must go forth to meet the environment in an active way, if they are to learn. The rat that sits quietly in the maze defies teaching; a quiescent creature in a constant environment learns nothing. Something can be learned of the creature by altering the environment, in the sense that the resistance of materials to scratching can be tested by altering the environment and observing the results, but that is quite a different matter - the observer, and not the "behavior" does the learning in this case. Further, the individual must have a set of values, however poor in quality before he can act. The values make

the individual aware of and sensitive to the different dimensions of the environment. That is, sense perceptions must be filtered and screened through a complex network of attitudes and orientations before the significant and the trivial can be separated and the intelligence brought to bear on particular dimensions of the environment. Without values, without some basis for singleing out particular perceptions, for choosing among alternatives, for expressing pleasure or distaste, behavior would be utterly meaningless. The application of values to the environment is a cognition problem, even if the attitudes are themselves sui generis, and correcting or improving the values is also a problem in cognition, in precisely the same sense that correcting and improving theories is a cognitive problem (and perceptive, of course). We have some information, however meagre and scanty, about values, motivations, attitudes, about the ways in which enthusiasm is kindled and dampened, about the impact of certain values on society, and so on, and what we have must be used. But the lacunae are enormous. We do not have enough knowledge of these dimension of life to base an adequate education program on them. Indeed, we do not have so much as the fundamental concepts needed for inventorying the human condition, and if an inventory cannot be produced there is no possible way to produce a rational allocation of time, energy, and resources. For example, we have little evidence about the impact of particular changes in the value structure on people in particular situations, or the impact of altering given social institutions in particular ways on different elements of the population. Intuitively and theoretically, values are of enormous importance in human behavior. But what is important, how they operate on whom, is for the most part obscure and unknown.

A second dimension of human interaction with the environment that is not usually emphasized with sufficient force is the degree to which the individual is oriented to active intervention in the environment to bring about desired goals or avoid unwanted outcomes. This is particularly important if human values are to be translated into social changes. Without active human intervention in the environment, directly as individuals or indirectly through social organizations, such changes will be purely fortuitous. Besides the value structure and cognitive capacity, man must have the

social technology that is needed to create and operate social organizations that can modify the environment on a vast scale with reasonable efficiency. And more broadly still, man must come to accept the pragmatic test of usefulness as the ultimate justification for both the search for knowledge and the claim to possess knowledge. There has been far too much dreary formalism, too much "art for art's sake," in education and training programs. The impulse to detach the search for knowledge, and hence the meaning of "knowing" from human purposes and from active use in the environment must be resisted and attacked. Similarly, the bias against social engineering and political activism, understandable though they may be, are counter-productive. Mindless social activism is repugnant, certainly, but the alternatives need not be defined in such terms. The old cant that the end result of social engineering is the beehive has too long been permitted to dominate our thinking about planning and deliberate intervention in the environment to attain human goals. The beehive is the end result of natural processes. No human would propose so monstrous a state for man, nor does the beehive follow automatically from an increase in the rationality level of human behavior. Without the desire to intervene and make changes, there could be no science and no improvement in the human condition. Of course, intervention must be reasoned and meaningful, systematized and controlled by observed results, not an exercise in ritual or symbolic manipulation, wholly beyond correction or test. In this conceptualization, the development of social technologies, of the capacity to initiate, develop, and sustain organized interactions with others, is an absolute necessity. In a very real sense, the central problem for man in an era where populations are enormous and the capacity of the individual to affect his fellow men and himself is absolutely contingent upon social organization, /man's ability to convert zero-sum conceptions of the human situation into nonzerosum constructions in which benefits need not be equal to losses and everyone can gain without any loss. Society will be a measure of man's capacity to reap the benefits of cooperative action.

COGNITIVE SKILL

In the methodological context employed here, "cognitive skill" is not intended as a measure of some individual capacity; it is an indication of the quality of the individual's production or output. The distinction is important because there is no way to be certain that any particular human action, or sequence of actions, is an adequate and accurate representation of the individual's capacity for dealing with a particular situation. Strictly speaking, cognitive skill is a measure of performance quality and not capacity, expressed in terms of the quality of the descriptions, forecasts, explanations, and value judgments implicit in the individual's behavior. Our metalanguage, speaking formally, is oriented to methodology. However, the goal of education and training is not to produce methodologists, persons able to discuss the conditions that must be satisfied by an adequate explanation or value judgment, but to help people to deal with concrete events or phenomena in methodologically competent ways. While it is often useful for the individual to be aware of the methodological dimensions of his inquiry, to know the critical apparatus employed in methodology, our fundamental purpose here is to assist the individual to produce descriptions, explanations, and so on of high quality and use them to achieve his purposes with reference to the environment.

The methodological criteria of adequate performance, then, must be built into the set of operating standards used by the individual to judge the quality of his own performance and the performance of others. The individual who is trying to build a business or form a labor union will think in terms of the concepts appropriate to such phenomena and not in methodological terms. It follows that methodological criteria must be translated into such field-relevant terms if they are to be transferred efficiently to the individual. We must, therefore, ask "what is involved?" in the various intellectual processes used to deal with the environment, in the same sense that an athletic coach must ask "What kinds of activities are involved in

playing football?" or a mathematics teacher asks "What are the fundamental units of performance in doing arithmetic problems?" The answers to such questions can be used to design suitable exercises for prospective mathematicians and football players. Such exercises are not football or arithmetic, strictly speaking, but they are an essential part of successful performance - they can be distinguished analytically in every act of playing football or doing arithmetic. For purposes of education or training, identification of such fundamental processes allows their incorporation into systematic and efficient instructional programs.

The prime unit in cognition is organization, in the same sense that the fundamental process involved in doing arithmetic is counting (forward, backward, in groups, etc.). The intellectual instruments used by man are devices that organize perceptions into patterns of varying complexity, using language as a medium. Thus descriptions organize perceptions into static patterns of similarities and differences, using concepts that may be simple (yellow, for example) or quite complex (an elephant). Descriptions contain propositions that involve patterned comparisons; they permit inferences relating to changes in patterns over time (which cannot be observed, as Hume so astutely pointed out). A forecast is a device that connects a change in one dimension of the environment to a change in some other factor in the environment over time according to a specified rule. For example, if the July 4th weekend is very wet and rainy, there will be more highway accidents. There is no implication that the changes are related causally - rain may fall without necessarily producing accidents, of course; the device is only a predictor. The instrument needed to produce a causal connection between variables is an explanation. Like a forecast, it connects two changes according to rule (If the temperature falls below 32° F., the water will freeze), but with the additional implication that if the temperature can be reduced sufficiently, by whatever means, freezing will follow with a very high degree of probability. A value judgment is the instrument used to impose a preference-ordering on a set of achievable alternative outcomes in a given

situation. The instrument is complex. It incorporates the explanations, etc. needed to project the available alternatives, a set of normative variables used to identify the relevant dimensions of the situation, a set of standards of preference for the normative variables, and a calculation of the implications of those standards for the situation in hand. The quality of each of these instruments or tools depends on their relation to observation, the precision of measurement involved, the fit to other accepted ways of mapping perceptions, the past history of the instrument in use, and so on.

The fundamental simplicity of the cognitive tools employed by man is masked by the complex apparatus to which we are socialized over time. Man joins the intellectual enterprise while it is in progress; there is no way to begin at the beginning, or even to think oneself back to the point of origin. We must take man as a creature already habituated to classifying and organizing his perceptions in particular way, and applying particular preference structures, more or less skilfully, to what he perceives. What is essential is the capacity to refine and improve the quality of the instruments, to criticize the descriptions, explanations, etc. that are produced by the self, or offered by someone else. Awareness of the requirements for adequate intellectual instruments is an important part of the machinery for self-correction, and at the level of the total or institutionalized educational structure, some part of the educated class will have to acquire the competence to deal systematically with such questions. But the rationale behind methodological inquiry remains the need to produce students and critics who are methodologically competent, in the same sense that a good athletic program produces good football players, not merely people who are good at doing push-ups. In both cases, evaluation is based on individual performance, not the characteristics of the curriculum or the qualifications of the teachers. The term "cognitive skill," like the term "management," refers to a complex performance, not some particular, identifiable activity. Identification of the various skills involved is essential if we are to organize learning intelligently. Obviously, the individual must learn to walk before learning to run, but deciding which kinds of activities or

exercises should come first and which should follow can be a difficult task. The justification for any particular element in the program is the contribution that it makes to the overall performance, to critical thinking; the justification for improving critical skill or methodological competence is the contribution it can make to human life.

In this context, the goals of the present study can be stated fairly precisely, along with the assumptions they presuppose. The immediate task is to extrapolate from the various structures and processes involved in description, explanation, forecasting, and value judgment the basic modes of perception-organization involved. The ultimate goal is an individual able to learn, achieve, innovate, and learn on the basis of experience in the environment in which he lives and works. Cognitive skill is assumed to be an essential item in the equipment of such a person. The function of the exercises is to improve the quality of the individual's thinking without directing his thought to particular ends or purposes. At the very least, cognitive training should eliminate barriers to successful functioning in the environment; hopefully, it can make a positive contribution to the individual's improved performance. The individual must be able to create and adapt and modify both the explanatory apparatus he employs in his behavior and the normative objectives that he pursues if he is to identify a worthy life for himself and create the intervention strategies and social technologies needed to achieve it. The end product should be a man able to calculate competently but not a mere logician, a man whose thinking is methodologically sound but not a methodologist. We begin by assuming that a particular set of skills contribute to that goal; the viability of the set is then tested against actual performance. The crucial point is to make a beginning that can be related to human needs and human experience and capacity, then to rely on procedures that permit and facilitate amendment of the initial assumptions in the light of pragmatic results. The selection is only a point of departure, not a finished product. Only experience can tell us whether the particular skills can be taught, and whether or not they are worth teaching.

In our study of the impact of AID-sponsored training on Guatemalan nationals, we were able to test only four dimensions of cognitive capacity: (1) temporal - the ability of associate or relate changes over time; (2) analytic - breaking complex tasks into components or elements; (3) synthetic - producing patterns relating one specific factor, which serves as a focus, to other factors in the situation; and (4) calculative - projecting implications accurately and avoiding errors in logic. Even at this very simple level, the questions served as a useful discriminator of environmental performance in a population that was fairly homogeneous with respect to education and work experience.

For the more specific study of the relation between cognitive skill and successful performance in the environment, eight basic dimensions of cognitive skill were extrapolated or identified, each involving one or more subclasses. Taken as a whole, the set proved a useful discriminator of performance when used with a population that had been stabilized with reference to values, information, education, and a range of other factors. The contribution of each of the elements in the total set remains to be tested, however, to arrive at the most efficient indicator of the skills that seem most strongly related to performance, and therefore the skills on which training programs and educational courses should initially concentrate. The labels used to identify the continua are tentative and to avoid misunderstanding a brief statement of the meaning of the concept is included.

(1) Temporal relations. In static description, there is no need to relate change over time, but when explanations are required, when choices are made, and when intervention strategies are being planned, the temporal element is absolutely essential. Individual performance must indicate antecedents of the present and consequences of the present projected on the future; unless these dimensions of the observed and inferred environment are included in the individual's thinking, there is little possibility of generating sound knowledge or using it effectively. Further, habitual exploration of longitudinal relations through time seems to be an important

element in the thinking of those who have made important contributions to the sciences and engineering and on those grounds too deserves further exploration.

(2) Patterning skill. To organize is to create or apply patterns to units of various kinds, to bring things into regular or systematic relations. A number of subdimensions of patterning skill can be identified as essential or desirable for successful adaptation to the environment:

a) individual thinking should include concern for dynamic patterns, in which the rules relate changes in the values of different variables, as well as static patterns, in which the rules relate different values of a common set of variables, or link together a diverse set of variables, each with specified values.

b) patterns should be multi-factorial, rather than statements of one-to-one relations among two variables. Here the influence of the philosophy of science tradition, with its conception of "laws" linking two critical variables, is pernicious; increasingly, scientists have become aware of the need to "ground" their laws in a background of variables whose values must stay within specified limits for the laws to operate. The question today is "How large a pattern is needed for what purpose?" and not "How does A relate to B?"

c) there should be a demonstrated capacity to produce roundabout connections between variables that are widely separated conceptually, to populate the conceptual "space" between variables with intervening connections.

d) Awareness of, and attention to, variables of the catalytic kind (necessary for a reaction to proceed) should be demonstrated.

e) Willingness to reduce radically the number of variables in a set when external purposes demand simplification, and then to test the resulting structure against performance needs, should be required.

f) capacity to produce and apply fairly complex rules of interaction (more than the inverse and direct relation rules) should be fostered.

(3) Analytic skill . A fairly complex configuration of performance characteristics or traits relates to the individual's abstraction, reification, and analysis of phenomena and situations. More specifically, demonstrated competence is desirable in:

- a) breaking complex patterns or conceptions into elements
- b) giving concrete illustrations of abstract or formal rules
- c) producing common denominators, general rules of classification that can be used to link apparently diverse elements.
- d) finding a rule of change in a particular, concrete illustration.
- e) applying a particular pattern to a concrete situation and testing fit

(4) Calculating ability. Formal reasoning from fixed premises provides man with the only procedures he has for generating implications or expectations that can be justified. Calculation provides the patterns by which man generates expectations about the environment, and the content of those expectations; it is essential for generating intervention strategies designed to achieve particular goals in identifiable situations. No individual could hope to master even the elements of man's present capacity to calculate in rich and sophisticated symbols, but the minimal requirements for reasoning effectively and avoiding disaster should be evidenced in performance, particularly with regard to:

- a) projecting the implications of a set of premises to allow identification of forced choices and non sequiturs.
- b) avoiding the more common formal and informal fallacies of reasoning and relevance - equivocation, amphiboly, composition, post hoc, and question begging at the very least.

(5) Counterfactuals. It seems desirable for the individual to demonstrate some capacity to handle counter-to-fact conditionals, or counterfactuals, since that activity seems to have played a major part in scientific innovation. That is, the individual should be able to produce a reasonable response to questions in the form "How would X be different if Y had been different?" The relation to awareness of the

impact of change over time is clear. What is perhaps less obvious, however, is the fact that the only tenable answer to a question posed in counterfactual form is an accepted or established theory or explanation. Posing counterfactual questions forces the respondent to produce or locate a pattern that will fit the available data and then manipulate the pattern in order to project the effect of certain modifications within it, and these changes too can be tested against the available information. Counterfactuals raise all of the questions involved in establishing and defending explanations or theories; as such, they are an invaluable propaedeutic.

(6) Experimental attitude. The manner in which the individual deals with his experiences obviously has significant consequences for his capacity for self-correction or learning. In general, trial and error learning, systematic testing of assumptions through experimentation (formal or informal) are fundamental habits of thinking that should be part of the individual's intellectual equipment. In particular, the individual should:

a) react to incompatibility or contradiction by reasoned efforts to resolve the conflict, realizing that it lies in his constructions, not in the world around him.

b) respond to failure of intervention, or a breakdown in expectations, by searching for a further elaboration of his patterns, or modification of the rules used to generate expectations. The difficulty here is that there is no way to formalize the point. No expectation is ever satisfied perfectly; how much dissatisfaction can be tolerated depends on purposes and costs. Perhaps the most that can be asked for is a set or attitude toward experience that is alerted to the possibility of error, and not merely verbally or rhetorically. Risk, uncertainty, and inconclusiveness must be accepted as constant elements in human calculation.

(7) Orientation to intervention. The individual must bring to his interaction with the environment a set of expectations that go beyond passive intellectual interest

or curiosity. Without some definite purpose in reference to the environment there is no way to evaluate the quality of man's intellectual instruments, and no way to justify the search for them. The individual must have a value structure that will lead him to seek means of controlling or modifying the environment for specific purposes. And he must be trained to act on it, habituated to seek occasions for intervening, and to develop appropriate intervention strategies, in terms of both individual action and organized behavior, for such occasions.

(8) Capacity for reasoned judgment. If human decisions are to be corrigible, and human knowledge is to be cumulated and refined, decisions must be based on the application of known standards to carefully stipulated alternative outcomes. The individual, in effect, must be capable of making reasoned judgments. Three dimensions of choice are particularly significant in this context:

- a) awareness of costs (or trade-offs)
- b) use of standards that compare (if the choice lies between A and B, choose B) rather than ideals or single-factor principles (choose A)
- c) calculation of forced conclusions from known standards rather than enjoining vague principles of behavior that are compatible with and not entailed by such standards.

A simplified version of this set of indicators was used in the Guatemalan study, and as a basis for the questionnaire administered to the Brazilian group at the Inter-American Center at Loyola University in New Orleans. In both cases, the complete set of indicators was employed, and no effort was made to establish the usefulness of particular elements of the set. In the summer of 1970, a project sponsored by the Center for Innovation in Human Development (CENFINN) at the University of Indiana in Bloomington began working on a more specific breakdown of the factors used to measure cognitive skill. The goal is identification of a set of factors that is efficient and effective as an indicator for both academic and occupational achievement. That

set of factors will then serve as a basis for developing teaching materials for improving cognitive skill levels in various situations. The ultimate test of the whole structure, of course, will be some evidence to show that improving cognitive skill leads to improvements in individual performance in a variety of life situations.

THE GUATEMALA STUDY

Our initial survey of the impact of AID-sponsored training on Guatemalan nationals had indicated that attitudinal variations did not account for the variance we found in performance in society. The purpose of the second survey, therefore, was to determine whether or not a measure of cognitive skill could be developed and a set of indicators of cognition skill identified that would relate to individual achievement and participation in society more strongly and positively than attitudinal sets related to achievement and participation. By stabilizing the attitudes and information supply of a small population containing significant variations in cognitive skill, we hoped to show that these variations related directly to differences in achievement and participation. For that purpose, a population was needed that contained individuals with similar educational and occupational backgrounds, and with similar attitudinal or value sets but with different levels of achievement and participation in society. Clearly, these requirements were most likely to be met by an elite study. Originally, therefore, we set out to locate matched pairs of highly-educated, urban Guatemalans, occupying influential positions in the society and sharing what might best be called a "developmental" orientation in values but differing as markedly as possible with respect to achievement and participation (or more precisely, intelligent participation) in society. That proved impracticable. The successful were unwilling, as a rule, to designate particular individuals with the same background, education, and occupation who were markedly less successful and less well-regarded occupationally; and the search for unsuccessful, self-designated low-level achievers, obviously, was an unpromising strategy. We therefore abandoned hope of being able to match pairs, at least in Guatemala, and tried a different tack.

Failing in our efforts to match individuals, we turned to groups as a basic unit. This time the goal was a sample of some 200 persons, composed in equal parts of young persons (25-45) who were outstandingly successful in their work (determined on the basis of reputation and performance ratings by peers) and young persons with the same general background and occupational interests who were not performing at the same level. The assumption here was the highly successful persons, taken as a group, would have markedly higher cognitive skill levels than those who were not outstanding in their capacity to deal with the environment. The sample was selected from among the best educated and most influential segment of Guatemalan society, including leaders in government, administration, business and banking, the professions, engineering and agriculture, the church and the arts and humanities. In general, we sought for the talented younger man whose accomplishments were most clearly his own and not a consequence of family influence.

The sample was selected by a group of younger Guatemalans, including a number of the persons that the "successful" part of the sample would ideally include. This group was located, and agreed to cooperate, mainly because of the fact that INAD was involved in the project and those at INAD used their personal as well as official associations to help in the selection. That is, we were supplied with a small group of younger men who were well equipped to identify individuals in Guatemalan society who fitted our sample requirements, and to assess their performance. INAD also supplied interviewers from the same educational and socio-economic groups, and in many cases these interviewers were able to use their personal relations with prospective interviewees to obtain information that would otherwise be wholly inaccessible. Further, the interviewers, given their background and association, were peculiarly well suited to evaluate responses on the spot, and thus helped guarantee the quality of the data obtained through the interviews.

The risks involved in sample-selection on a reputational basis are well known. Their prime implication for the present study is the need to treat results with caution

or what is the same thing, to limit claims based on the results. The group that made the selection worked together well and openly, and, since Guatemalan society is not large, the likelihood that really outstanding achievers would be lost or ignored was fairly small. Neither the American nor the Guatemalan governments was involved in the selection, hence the danger of an "official" bias, or a "political" designation was avoided. We had expected serious disagreements about the identification of achievers. That turned out to be a minor problem. The real difficulty was locating one hundred Guatemalans who could honestly be designated "outstanding achievers." When the list reached about sixty, the resources of our selection group were exhausted. At first, we assumed that we need only bring in further advisors to complete the sample of one hundred, and that was in fact done by INAD. But the result was clearly a badly diluted sample hence we were forced to return to the initial group of sixty (about 55 of whom were interviewed) and designate them as our outstanding achievers. A group of one hundred non-achievers, or more precisely, individuals whose achievement was not outstanding, was selected as a control. They were matched, as far as possible, to the outstanding achievers in terms of occupation, educational background, and so on. It was clear from the interviews that a few of the controls were in fact very high level achievers, possessed of high levels of cognitive skill, but that was to be expected and causes no trouble so long as the comparisons are kept at the aggregate and not the individual level.

Stabilization of information and values

Given the purposes of the inquiry, one function of the questionnaire was to make certain that the information supply available to the interviewees was approximately equal (so that differentiation in cognition skill did not merely reflect differences in the supply of available information) and that they maintained roughly the same value orientation. By concentrating on community and social affairs of a general kind in the questions designed to probe cognition skill, and by testing the individual's

awareness of current social, political, and economic affairs we were able to show that the availability of information was relatively stable across the whole sample. Nearly everyone questioned was well-informed, articulate, and closely tied into the information network in Guatemala (radio, television, the press, and so on). At the aggregate level, the assumption of a common information base is readily compatible with the findings.

Stabilization of value-orientation was based on a set of ten continua or dichotomies taken from the standard literature on national development. The same set of continua was used in the earlier study of the impact of training, hence the two studies are comparable in this dimension, and our earlier conclusion that differences in values at the basic level were relatively insignificant across the whole spectrum of Guatemalan society is amply borne out by the elite study. The ten continua serve to distinguish what is called a "developmental orientation" from a "traditional orientation," on the assumption that the former would choose one end of the continuum while the latter would lead to a preference for the other end of the continuum. The further assumption, common in the literature on development, that a "development orientation" is either a necessary or sufficient condition for national development is not relevant here, but our earlier study suggested that it could not be more than sufficient. The ten indicators of development and traditional orientation are as follows:

- 1) A development orientation leads to the conceptualization of social problems in collective or social terms; traditional orientation is expressed in a preference for personal, familial, or specific conceptualization of problems.
- 2) Development orientation is shown by emphasis on collective achievement; traditional orientation is shown by emphasis on individual achievement.
- 3) Developmentally oriented persons expect the collectivity to serve as the prime instrument of social change; traditionally oriented persons rely on the family, or the individual for that purpose.

4) Development orientation shows as a tendency to relate to society through active participation in community affairs; traditional orientation leads to acquiescence or indifference to community affairs.

5) Developmentally oriented persons prefer to rely on social institutions such as courts or parliaments to accomplish social goals; traditionally oriented persons rely more readily on leaders or on particular persons.

6) Developmental orientation is expressed as optimism and friendliness to change; traditional orientation is shown by resistance and fear for social change, by maximizing dangers and minimizing potential.

7) Developmental orientation includes a high value on discussion and argument as a means of clarifying points at issue; traditional orientation represses argument and conflict and urges the need to acquiesce to authority.

8) Developmental orientation focuses on the present and future; traditional orientation is shown by slight regard for the future and excessive concern for the past.

9) Developmental orientation assigns legitimacy on the basis of performance or achievement, using such qualities as education or work performance as criteria; traditional orientation assigns authority on the basis of past history, ascribed status, and position achieved through association rather than performance.

10) Development orientation includes willingness to undertake risk in order to speed change; traditional orientation produces a preference for safety, even at a price of low achievement and lack of change or improvement.

Questions relating to these ten attitudinal continua were incorporated into the questionnaire used with the elite sample, thus providing a basis for stabilizing attitudinal orientation. As might be expected, the developmental orientation was adhered to by the overwhelming majority of the population - as in the first survey, the tradition-oriented man was a rarity.

The indexes

Three separate indexes were prepared for each person included in the survey - cognition skill, developmental orientation and community participation. The instructions used to prepare the indexes are shown in Appendix C. Each question in the interview provided the individual with an opportunity to make a choice, express an opinion or attitude, or provide information about his own behavior. The range of answers actually given to the questions were then linked to the set of indicators used to define cognition skill, developmental orientation, and community participation. That is, it was assumed that persons with high cognition skills would answer particular questions in particular ways, or more precisely, that their answers would show certain analytic characteristics. A maximum score was then calculated by totaling each of the possible answers on the coded interview: 110 for cognition skill, 59 for developmental attitudes, and 50 for community participation. Some responses were weighted slightly when there seemed adequate theoretical justification for assigning greater emphasis to particular response characteristics, but the weighting was slight and the goal was maximization of the number of possibilities, thus spreading the scale as broadly as possible. The result is far from a precise interval scale, of course, but the index numbers do serve as a general indicator of overall performance and they allow useful comparisons within the sample. As the graph in Appendix B shows clearly, the members of the sample spread very nicely across the board in all three cases, indicating that the indexes do serve to differentiate the population systematically.

The sample

It is useful to compare the sample used to study cognitive skill with the national sample used to study the impact of AID-sponsored training on participation and attitudes. The national sample was well-distributed geographically, ethnically, and occupationally; it approximated very closely on some dimensions a true national sample. The elite sample used to study cognitive skill was in most respects quite different in composition. Both the similarities and differences need to be kept in mind when parallels and discrepancies in the findings of the two studies are being considered. A brief comparison of the two samples, therefore, provides an essential element

for evaluation and criticism of the results.

In two respects only, the samples were quite similar: each was made up of about 90 per cent males and 10 per cent females and each consisted largely (two-thirds) of persons between the ages of 26 and 50, although the national sample contained more older persons. In most other dimensions, the samples differed radically and in ways that could have been anticipated, given the differences in intention between the two inquiries. The very sharpness of the differences between the samples render the similarities in development orientation even more striking than would otherwise be the case.

All members of the elite group were Ladinos, whereas some 40 per cent of the national sample consisted of Indians; virtually all members of the elite were urban dwellers, while some 80 per cent of the national sample was rural. Occupational differences were equally marked: about 50 per cent of the national sample were farmers while only 10 per cent were professionals and perhaps that same number worked for government; in the elite sample, none was a farmer, nearly 20 per cent were members of the professions, 15 per cent were governmental administrators, more than 10 per cent were professional politicians, and like amounts were employed in banking and industry and arts and letters. Educational backgrounds were even more disparate: in the national sample, 20 per cent had no education whatever, 30 per cent between one and three years of schooling, and only 8 per cent more than a high school education; in the elite group, none had less than 6 years of schooling, only 8 per cent had less than a high school education, and 80 per cent had finished college (over 50 per cent of the group had some graduate study behind them). Income followed the patterns set by education and occupation. In the national sample, 60 per cent of the total earned less than 50 Quetzals per month, only 8 per cent earned more than 200 Q. per month; in the elite group, only 18 per cent of the total earned less than 300 Q. per month, and about half of them earned between 300 Q. and 800 Q. per month. While our national sample was probably "elitist" because of the large number of training program graduates it included, the educational-economic distinctions between the two samples remain striking.

With reference to other factors such as connections to the information network, the distinctions between the two samples are significant, but perhaps less overwhelming than one might expect. For example, virtually everyone in the elite group read a newspaper every day and many read two or more papers each day; only 30 per cent of the national sample saw a newspaper daily and about 40 per cent of the group rarely or ever read a paper - partly an indication of the importance of geographic location in a country where transportation is poor and partly a tribute to the level of illiteracy in the society. Where literacy is less significant the distinctions are less marked. About 70 per cent of the elite group listened to news broadcasts daily (an indication of the extent of their reliance on the press) while about 55 per cent of the national sample heard a news broadcast daily. At the level of information availability, the impact of access to the written word seemed to be felt most at the level of international issues. About 90 per cent of the elite group was well informed on local, national, and international issues; in the larger group, about 65 per cent were well informed about local matters, something less than 50 per cent were familiar with national issues, and only about one-third of the total were well informed about international affairs. These distinctions were also reflected in the kinds of issues which were chosen as a focus of interest by the different elements in the two samples. The national sample tended to concern itself with particular and specific questions (jobs, housing, roads, food, education); the elite group was much more concerned with general problems such as social instability and violence, social and economic conditions, illiteracy, and lack of national development. Not only were the concepts used to identify the issues quite different, but the implied means of solution for such problems were necessarily influenced by the choice of terms used to define problems. Within the national sample, simplistic solutions to complex problems are the rule; the overselling of education as a universal panacea for human ills is only one striking case in point. The elite, on the other hand, values education and is concerned to improve its quality but does not regard it as an automatic solution

for all social problems. Education figures in the future aspirations of about 70 per cent of the national sample, for example, but only for 30 per cent of the elite group. Elite opinions are apparently better grounded, doubtless a result of a better fundamental education, for they are little influenced by factors such as the amount of travel undertaken, the amount of reading done, or general reading habits. The elite tends to be better informed irrespective of reading habits. Finally, the elite tends to concern itself more with economic matters, and with politics, than the national sample which is concerned with particular and what might be called "personalized" questions.

Given these differences in background, and in access to information, the similarity of the expressed attitudes of the two groups is astonishing. The elite dealt with problems in collective rather than individualistic terms, expressed its goals in social terms, and thought in terms of collective solutions to large-scale problems to a degree unmatched by the national sample. But in most other respects, the differences are less marked, supporting the findings of the earlier study that the expressed values varied little with socio-economic background. This shows particularly well when we consider the distribution of contrasting attitudes within each sample. About half of each group chose to eliminate foreign influence from the country rather than attract foreign investments; roughly half of each group believed that society functioned as a zero-sum game, and by implication at least thought this condition could not be altered radically. Something more than two-thirds of each group felt that the young should await and rely on the advice of their elders in important matters; about the same portion of each group was future oriented rather than past or present-oriented. Neither group was much inclined to welcome disagreement and conflict, whatever its theoretical virtues (about 85 per cent against in each case); both groups were overwhelmingly localist rather than centralist in terms of preference for an authority structure (about 90 per cent). Both preferred low-risk, low gain strategies rather than high-risk, high gain enterprises; both relied more on institutions than persons.

for promoting the welfare of society. Furthermore, legitimacy was usually assigned on the basis of achievement rather than ascription by both samples, and the collectivity was accepted almost without exception as the prime instrument for achieving social change - though this may be so patently obvious in the underdeveloped nations that extreme individualism and belief in private initiative is a rarity outside AID circles.

At the behavioral level, the influence of AID-sponsored training is readily discerned in the very high performance levels of members of the national sample - which includes a high percentage of training graduates and is to that extent most unrepresentative of the nation as a whole. Three of every four members of the elite belong to a social organization of some kind; two of each three members of the national sample are group members. In each case, about half of the total had sought to organize social groups. Multiple memberships were claimed by one-fifth to one-sixth of the total. However, the type of group to which the individual belonged differed substantially for the two samples: members of the national sample tended to belong to cooperatives and groups concerned with education, schools, and roads - a reflection of their predominantly rural location and interests; members of the elite sample most frequently belonged to cultural groups or welfare organizations. About the same portion (three-fourths) of each group contributed to organized social activity in terms of time or money. At the level of bare membership, without regard to qualitative distinctions in the meaning of "membership," the similarities are quite striking.

With reference to more specifically political activity, the elite was much more deeply involved than the national sample, as might be expected. Only one member in eight of the national sample belonged to a political party, for example, while one member in four of the elite group was a party member. While regular voting was the rule for both groups, only one person in nine of the national sample campaigned actively while about one in three of the elite group was an active election campaigner. Office holding, appointive or elective, was more frequent among the elite group, obviously, and one of every two had held some public office; one man in five of the national sample had been an officeholder, but that figure is much inflated by the high percentage of AID-trained persons it includes - they were very active in cooperatives and other

local groups such as school or road committees.

All in all, the major surprise in the findings is the extent to which the elite and the national sample shared common expressed values. The impact of education is marked, as might be expected, and the differences in life style appear clearly enough, but the attitudinal distinctions are slight, all things equal. Even the amount of variation in the values of the indexes is about the same in each questionnaire; the indexes have approximately the same range and standard deviations. The effect of age, education, ethnicity, sex, and so on is about the same for both groups. All of which is encouraging, for it suggests that neither the focus of inquiry nor the approach to measurement employed in the study is peculiar or idiosyncratic and therefore likely to produce results so badly skewed that they have no general applicability.

FINDINGS

Most of the questions asked of the sample population can be found in the summary of results in Appendix A, but the section of the questionnaire dealing with cognitive skills posed some special problems and the way of solving them requires precise statement. Since cognitive skill is a characteristic of individual product or thinking, and we wanted an index to the general level of thinking of the individual, so far as that could be determined and ignoring the undoubted "Hawthorne effect" produced by the interview situation, it was essential that each interviewee be given an opportunity to state his thoughts with as little leading or cueing as possible. After experimenting with two or three different types of questions, we rejected the so-called objective or forced response question in which the individual is required to choose among specific answers, as well as the specific "problem-solving" situation in which the individual is faced with a hypothetical question (the principal objection here is that such questions lack the empirical constraints that must be evidenced in high-quality thought about the empirical world). Instead, we allowed the individual to pose his own question, as it were, and then pursue it in his own way with as little prompting as possible from the

interviewer. All of the responses were tape recorded, or in some few cases recorded as fully as possible by the interviewer and reconstructed in still more detail later in the day. There were very few objections to the recording, happily, and the results are for the most part taken from literal transcriptions and translations of the responses given by the individual.

The format of the interview was kept as simple as possible and timed for about one hour of responding. After a brief period in which background information was supplied, the interviewee was asked to suggest two of the more serious problems facing the people and government of Guatemala (an area in which prior questions stabilized the information base of the sample). A selection of one question was then requested and that point served as a focus for further questioning. There was no prompting, and the interviewer went rapidly to the next question if there was no quick response or not indication of a desire to respond. The sequence of questions was as follows:

- 1) Why do you think this problem is found in Guatemala today? Why did it happen this way?
- 2) Do you think that the problem could have been avoided? If so, How?
- 3) What do you feel can be done about the problem right now?
- 4) Is there anything you can do about the problem?
- 5) Suppose that your suggestions were tried but failed to solve the problem, what would you do then?
- 6) Looking backward at Guatemalan history, what events in the past have had the most influence on the socio-economic situation found there today?
- 7) Looking ahead, what events occurring in Guatemala today seem most likely to have an impact on Guatemala's future? What kind of impact?
- 8) What would happen in Guatemala if imports and exports were suddenly halted?
- 9) How would you be affected by that action?
- 10) How would you choose an assistant from among five applicants for the job? What questions would you ask? What tests would you use?

- 11) What are two changes you would most like to see in Guatemala at present?
- 12) What is the worst thing that could happen in Guatemala in the next five years?

The coding of responses proved time-consuming, particularly in the early stages of processing, but not impossible by any means. Two coders were employed, with frequent cross-checking of results. Each question, of course, provided the raw material for answering a number of questions about the analytic character of the individual's thinking, e.g., use of single- or multi-factor patterns, orientation to future, etc.

The characteristics of the sample have already been dealt with in the section dealing with comparisons of the first and second questionnaires employed in Guatemala and need only be summarized here. Of the 198 interviews completed (two were discarded because they were incomplete), 37 were with members of the professions, 25 with civil servants of the central government, 6 with local government officials, 16 with bankers, 25 with representatives of the arts and letters, 10 with educators, 18 with writers and journalists, 24 with professional politicians, and 5 with representatives of the church. The group was most male (176 male, 22 female), and entirely made up of Ladinos. The ages ranged mainly from 26 to 45: 77 were aged from 26 to 35, 111 from 36 to 45. The sample was overwhelmingly urban, chiefly from Guatemala city. The educational level of the group was very high: 26 had graduate degrees, 107 had finished university training, 44 had finished high school and attended college though without completing a degree. Income levels were also high: half of the group earned between 300 Q. and 800 Q. per month; about one fourth earned more than 800 Q. per month; only a fifth earned less than 300 Q. per month. In effect, the elite sample includes some of the most successful young persons in Guatemalan society, measured in terms of education and training, occupation and work experience, and capacity to contribute to society by virtue of position and potential.

As already noted briefly, the sample was on the whole very well informed about issues and problems at all levels of society - local, national, and international.

They read newspapers, journals, and other sources of information regularly; they listened regularly to news broadcasts on radio and television; they discussed current affairs regularly with others, at work and at home. As we might expect from the sampling procedures employed, the group placed a high priority on political-social-economic affairs in their daily lives. More than half of the sample indicated a dominant concern for political affairs in their appraisal of the long-range future of Guatemala. Their ordering of current social problems placed violence, insecurity, and factional strife first in importance and underdevelopment or general social conditions second. When specifics were mentioned, illiteracy appeared most often, followed by violence and civil disruption. More than one third of all respondents felt that the worst possible disaster that could overtake Guatemala in the next five years was a continuation of political violence; about one fourth mentioned economic stagnation and failure to make social and economic progress. All of which is entirely consistent with a "developmental orientation." However, when asked about their own individual aspirations, some inconsistencies appear. About one-third of the group stated that their aspirations for their children were no different than the aspirations they held for themselves, though about one-third of the group wanted their children to have more education. No one was concerned with the prospects of a changed socio-economic-political structure, though a very few hoped for increased social consciousness and more orientation to social needs. They were like rain dancers who did not take umbrellas to the dance. The rhetoric is unfailingly communal and collectivistic but the aspirations tend to be asserted in individualistic terms, and in a context limited to the family and little concerned with the impact of major social changes - the unstated presumption is that little will change and the values and technologies they found appropriate will also prove appropriate for their children. It is interesting to note, in this context that only those few persons who showed very very high levels of cognitive competence as measured by our index were much concerned with future changes that involved complex modifications of the rules of the game, of the fundamental institutional arrangements

of society. Otherwise, the rhetoric of change and behavior seemingly oriented to tradition and maintenance of status quo coexisted peacefully.

Group attitudes toward questions related to the attitudinal continua used to distinguish traditional from developmental orientations were in most respect similar to attitudes expressed by the larger national sample. On some points, they agreed almost without exception: investments in education are preferable to investments in land (193 to 5); men have an obligation to save part of their earnings (182 to 11); Guatemalans as a group waste too much time (169 to 24); a steady job with low pay is better than an uncertain job with high pay (144 to 37); government should have the authority to locate trained specialists such as physicians where they are needed (170 to 18). When a choice was forced by the interviewer, they preferred investment in health, education and welfare to investment in capital goods (164 to 22), formation of cooperatives to the formation of private businesses (164 to 22), teaching children to play the game well to teaching children to play to win (172 to 25), studying failures for error to forgetting them (194 to 3), increasing the power of local government to increasing the power of the central government (171 to 22), improving social conditions within Guatemala to increasing Guatemalan prestige abroad (186 to 7), and teaching men to regard the rights of others to teaching them how best to improve their own lives (153 to 34). In their assessment of the responsibility of individual and society respectively, they asserted individual responsibility for feeding and clothing the family (183 to 13), securing employment (129 to 67), educating the children (111 to 85), providing medical care for the family (106 to 90), providing travel and recreation for the family (174 to 22) and maintaining family discipline (186 to 10). Most asserted that they would turn to the family for help if they were in trouble (129) though a few preferred to rely on friends (33) or the church (11). Here the elite differs from the national sample which relied heavily on government as a source of assistance in times of trouble.

The points on which the group disagreed on values are interesting and instructive. They were almost evenly divided on the question whether or not a man should get involved in community affairs until his family affairs were provided for (93 to 94), and on the zero-sum proposition (empirically false, of course) that if some members of society were growing rich others must be growing poorer (94 to 96). They disagreed significantly on the question whether the young should wait for their elders (142 in favor) or make their own decisions independently (51 in favor). More than half (105) felt that it was good for people to learn to do without but a substantial number (83) disagreed; about the same number argued that laws which violated ethical principles should be disobeyed (106) and an equal number (83) disagreed - in many cases, the same individuals were involved. About 40 per cent (79) felt that those who were not participants in community affairs should be penalized, but the others disagreed. With respect to two shibboleths of long standing in American society the sample disagreed radically. Asked whether private organizations perform social tasks more efficiently than public agencies, 107 agreed and 74 disagreed; asked whether practical experience is more useful than formal education in important matters the division was even closer - 85 agreed and 99 disagreed. In the forced-choice situations, 101 preferred to reduce foreign influence in Guatemala while 93 thought that more foreign assistance was required. About one-fourth of the group (56) thought that political rights were more important than welfare programs; roughly the same number, not the same persons necessarily, thought that men should live as well as possible in the present because of the uncertainty of the future. The majority suggested the exercise of due care in trusting others, though 85 argued for acting in a trusting manner, a surprising figure given the tenor of the times. For example, asked whether or not they would stop to aid an automobile in apparent distress during the hours of darkness, about one-fourth indicated that they would stop, albeit cautiously. But with respect to the balance between risk and progress, 82 were prepared to undertake risk to make rapid progress and 113 were prepared to trade speedy progress for a reduction in risk. Caution, and perhaps a measure of cynicism, is apparent in the overall pattern. At the verbal level at least, the elite was

oriented to modernization, but cautiously and without much hope of really rapid change. The bias is slightly right of center, as might be expected in a group with a substantial stake in society; cautious conservatism is more common than aggressive attacks on the existing socio-economic-political structure.

COGNITION SKILLS, ATTITUDES, ACHIEVEMENT

Turning to the central focus of the study, the relation between cognition skills, attitudes or values, and participation or achievement in the society, the assumption to be tested is that achievement and participation are associated with high levels of cognitive skill rather than high levels of developmental orientation, that cognitive skill is a better indicator of achievement than attitudes. Achievement is measured in two different ways: first, achievers are identified by means external to the questionnaire by reference to occupational accomplishment; second, participators are measured in terms of the responses given to specific parts of the questionnaire. While the numerical indexes must be treated with great care, and comparability is a real problem, the evidence that the study provides seems convincing so far as the superior efficacy of cognitive skill over attitudes as an indicator of performance is concerned.

Beginning with the gross figures, the cognition skill level of the 54 achievers in the group is 57.0 (mean for all members of the sample, 48.9); the index average for the control group is 46.0. On the participation index, achievers produced an average score of 29.0 as against 23.4 for the control group. But on the attitudinal index, the scores for the achievers averaged 34.0 (mean 35.8) while the control group had a mean score of 37.0. Taken as an aggregate, cognitive skill correlates positively and strongly with occupational achievement measured by external means, and positively and strongly with participation in community affairs as measured by the questionnaire, but achievement correlates negatively with scores on the development index. Other findings sustain the same general conclusion: cognitive skill is a much more effective indicator of both occupational achievement and participation in community affairs.

The conclusion holds without regard to the way in which we approach the data.

If we begin with the fifteen individuals with the highest cognition skill indexes (average for the group, 77.0) the average participation score is 33.9, an average of about 30 per cent more than the mean for the whole sample of 25.9, while the average score on the attitudinal index is 35.8, which is precisely the mean for the whole group. High cognition skill is clearly associated with high participation and achievement (all fifteen were members of the original list of 54 achievers) but not with developmental orientation or attitudes. On the other hand, the 18 highest scores on the developmental attitude index (the number was selected to include all ties) the average is 45.5, about 30 per cent higher than the mean for the whole group. The average cognition skill score for this group is 47.6 (about 2 per cent below the average for the whole group) and the participation scores average 27.3, an increase of only 4 per cent over the mean. Further, only two members of this group are included in the list of 54 achievers used as a base for the study. Moving in the other direction, if we take every person with a participation index score greater than 30.0 (mean is 25.9), the average cognition skill index is 58.0 (mean 48.9), about 18 per cent higher than the mean for the whole group, while the developmental attitude index averages 37.2, barely 3 per cent more than the group average. At the other end of the continuum, the individuals with the fifteen lowest scores on the cognitive skill index (20.4 as against a mean of 48.9) had an average developmental attitude index of 29.8 (mean 35.8) and a participation score of 19.0 (mean 25.9)

Bearing in mind the roughness of the indicators, and with an added warning against being misled by the precision of the numbers used to state the index scores, the following propositions seem justified by the findings:

- 1) high cognition scores are associated with achievement and participation but not with high scores on the developmental attitude index.
- 2) those with high developmental attitude scores do not score very well on the participation index, nor are they outstanding occupational achievers.

3) high levels of participation correlate strongly and positively with high scores on the cognition skill index and only weakly with high scores on the attitudinal index.

4) low scores on the cognition skill index correlate negatively and strongly with high levels of achievement or participation in community affairs.

5) cognitive skill provides a good correlate for occupational achievement; attitudinal scores correlate negatively with high level achievement.

Further refinement of the instrument used to test cognition skill is still required, of course, and in particular the subclasses of skills that comprise the aggregate package need to be measured separately to provide a more efficient gross index, but the value of cognition skill as an index of performance seems clear. At the very least, it is much more effective than attitudes, and, since it involves consideration of a very different set of factors in training and education, its implications are highly significant for policy development.

Having established the major point to be made by the study, we can take a closer look at the factors related to cognitive skill level, and at some of their implications. As we might expect, certain curricula tend to produce higher levels of cognitive skill than others. Furthermore, those whose occupations require them to interact systematically with the environment, employ causal relations, and plan deliberately to intervene to bring about particular outcomes that can be tested by observation also tend to have higher scores on the cognition skill index. Engineers, almost without exception, score better on the cognition skill test than those trained in arts and humanities, and physicians, economists, bankers, and agricultural experts score much higher than members of the clergy, artists, or journalists. One implication of this finding is most exciting: we may have produced a base from which performance tests can be developed which can be applied to the various curricula without regard to their internal tradition, thus providing a meaningful alternative to measures of educational achievement that make reference to teacher/pupil ratios, budget figures, building size, salaries, and so on.

The relation between cognitive skill and other factors in human experience are interesting, and in some cases surprising. Scores tend to increase with age and experience, but are less influenced by the amount (not the kind) of education that the individual acquires - perhaps because changes in cognitive skill are differentially distributed within the various curricula of the educational structure, hence stratification based on years of schooling does not separate out changes that actually occur. In this context, it is perhaps worth noting that attitudinal index scores do not seem to be much influenced by age, which suggests that the questionnaires produce a cross-section of the accepted values of the time and place and that fundamental differences between the various age groups are less significant than we are led to believe - at least in Guatemala. The individual with high cognition skill tends to hold more jobs than the norm, and his earnings are substantially higher than those of the person with low cognitive skills. Cognitive skill seems not to be influenced by the amount of travel undertaken by the individual, by the democratic/authoritarian structure of the father's household, or by the extent to which the father is involved in community affairs.

One point that needs special emphasis, if only because of the current tendency in governmental circles and among academics to place an inordinate weight on the individual's commitment to social melioration and community programs, is that high levels of cognitive skill are often associated with persons who seem primarily concerned with their own affairs and little interested in community programs - some of our highest cognitive skill scores were associated with very low levels of participation, for example, but outstanding achievement in occupation or profession. In today's rhetoric, that form of individual bias or commitment is often considered unfortunate in terms of its implications for society as a whole. This presumption needs to be questioned. It is a moot question, surely, whether the underdeveloped nations would most benefit from the performance of skilled entrepreneurs pursuing their own interests or from the actions of these same individuals avidly pursuing community interests. Certainly the

conclusion is not obvious, and when the need for incentives is taken into consideration seems highly questionable. The point that is relevant to education and training, however, is that cognitive skill is neutral with respect to the beneficiary. The kinds of thought habits that are beneficial for the private entrepreneur are apparently identical to those that will further the public welfare or the careers of civil servants. The question which values, coupled with adequate cognitive skill, will produce the greatest benefits for an underdeveloped society is an empirical point, and not a normative problem.

The types of responses that are associated with high levels of cognition skill are most interesting since they provide a composite or mosaic of the kinds of persons involved. Individuals with high scores on the cognitive skill index:

- 1) almost invariably have high incomes, and vice versa.
- 2) are concerned with economic questions to a very marked degree, and usually with quite complex macro-level problems such as the common market, import and export requirements and so on.
- 3) tend to produce complex, multi-factorer, tentative explanations of events.
- 4) tend to generate long sequences of interactions or repercussions, rather than simple one-step or one-to-one patterns.
- 5) are most likely to suggest careful investigation, study, planning, and rational cooperation as solutions to social problems.
- 6) tend to regard elites as the prime agency of social change, and to assume that both public and private agencies will contribute to national development.
- 7) are acutely aware of costs
- 8) provide good answers to counterfactuals, and do so readily
- 9) tend to think in terms of institutional arrangements rather than personalized terms.
- 10) tend to be suspicious and guarded in their relations with others
- 11) learn from experience, and regard experience as tentative.
- 12) limit propositions by caveat

13) emphasize individual responsibilities rather than governmental obligations.

It should be emphasized that individuals with high cognition skill levels tend to share all of these characteristics, and not merely a selection of them.

By way of contrast, the composite portrait of the person with very high scores on the developmental attitude index that emerges from the study emphasizes quite different individual characteristics or traits. The developmentally-oriented individual tends to:

- 1) rely heavily on slogans and catch-phrases in his arguments and suggestions.
- 2) look to the general population (the "people") as the prime agent of change
- 3) indulge frequently in symbolic behavior rather than concrete actions when social problems are under discussion and solutions are proposed.
- 4) concern himself primarily with personal needs - poverty, the plight of the peasant, and so on - rather than features of society.
- 5) include all of the radical reformers and revolutionaries in the sample
- 6) look to government rather than the individual as a prime source of assistance
- 7) be quite unable to cope with counterfactual questions
- 8) show little evidence of learning from experience - largely, from a close examination of individual questionnaires, because his original assumptions are so loose and unstructured that the question "What" has been tested by his actions cannot be answered.
- 9) insist strongly on his own way of solving problems, regardless of the consequences that flow from acting on them.
- 10) be more trusting of his fellow man than the high cognition skill person
- 11) value democracy, voting, and participation as principles.

Again, the contrast between the two composites should not be construed to mean that concern for values and preferences can be set aside; attitudes are an essential part of behavior, whatever the context. What the findings suggest is the need to attend to the cognitive dimension of behavior as well as to attitudes, no more.

Conclusions

The present report is more by way of an interim account of progress than a final and conclusive document. The principal conclusion to be drawn from the study is that further development along these lines is highly desirable. The measures of achievement and participation, attitudes, and cognition skill used in the study are all extremely rough; the procedures used to locate high-level achievers in Guatemala are at best liable to substantial error. The data suggest that we are on the right track, that the questions raised for investigation are worth pursuing, and that the assumptions used to structure the study seem compatible with the findings. If the promise of the findings is fulfilled, there is good reason to suppose that indicators of cognitive skill can be developed that will perform two highly significant functions in education and training:

- 1) serve as an indicator of success in occupations that require adaptive behavior and learning rather than rote performance of duties.
- 2) serve as a test of the performance of educational and training systems and a guide to the development of subject matter and curricula in diverse fields of study.

The two major tasks remaining, then, are the development of a precise measure of cognition skills and a demonstration that not only is achievement directly related to cognitive skill (the present study does that fairly well) but that improving cognitive capacity leads directly to higher achievement. In the nature of things, these tasks will take time, and could not be completed under the terms of the present contract. But the development of a more precise measure of cognitive skill, and in particular the identification of the various subskills that go to make up the complex that we identify as cognitive skill, is already under way at the University of Indiana under the auspices of CENFINN. Experimental programs of testing high level achievers and low-level achievers in academic and various occupational areas will

be carried out at three sites in the coming year - the school of Comparative Education at Indiana University, the Metropolitan Center at the University of Missouri, St. Louis, and the Inter-American Center at Loyola University in New Orleans. Classes designed to improve cognitive skill will provide panels that can be used for longitudinal studies of the impact of changes in cognitive skill on other dimensions of human performance. The results of this work will be made available to AID as it is completed.

APPENDIX A

CODING INSTRUCTIONS

COGNITION SKILL, ATTITUDES, AND PARTICIPATION

Brandeis study: Guatemala
Fourth Questionnaire

Key:

The number of persons in each category, for each question, appears in parenthesis.

The means for the indexes are as follows:

cognition skill	48.9
developmental attitudes	35.8
participation	25.9

Question

cog. sk. devel. part.

1)

First digit of identification number

0) 0
1) 1
2) 2
3) 3

2)

Second digit of identification number

0) 0
1) 1
2) 2
3) 3
4) 4
5) 5
6) 6
7) 7
8) 8
9) 9

3)

Third digit of identification number

0) 0
1) 1
2) 2
3) 3
4) 4
5) 5
6) 6
7) 7
8) 8
9) 9

4)

Card number

0) 1
1) 2
2) 3

Question

47

cog.sk. develop. part.

5)

blank

6)

Occupation of interviewee

52 38 27
 57 38 27
 52 37 27
 50 37 24
 38 33 21
 48 35 28
 38 35 25
 45 34 25
 49 36 30
 50 35 25

0) professional -legal,medical,professor (37)
 1) employee of central government (25)
 2) employee of local government (6)
 3) banking and finance (16)
 4) art, music, letters (25)
 5) education (10)
 6) church (5)
 7) journalism, writing (18)
 8) politics (24)
 9) other (32)

7)

Sex

49 36 26
 45 33 24

0) male (176)
 1) female (22)

8)

Performance evaluation

57 34 29
 46 37 23

0) achiever (54)
 1) control (144)

9)

Ethnic background

49 36 26
 -- -- --

0) ladino (198)
 1) indian (0)

10)

Age of respondent

-- -- --
 48 31 19
 49 36 26
 49 35 26
 47 36 26
 52 36 26
 56 37 28
 -- -- --

0) under 20 (0)
 1) 21-25 (5)
 2) 26-30 (35)
 3) 31-35 (42)
 4) 36-40 (74)
 5) 41-45 (37)
 6) 46-50 (5)
 7) over 50 (0)

question

48

cog.sk. develop. part.

11)

37	37	20
48	37	26
50	36	26

Place of residence

- 0) rural area (2)
- 1) place other than Guatemala City (23)
- 2) Guatemala city

12)

--	--	--
43	33	21
48	36	26
50	36	27
48	36	26
62	33	33
50	45	25

Number of years of education

- 0) 1-6 (0)
- 1) 7-12 (16)
- 2) 13-16 (44)
- 3) 17-20 (107)
- 4) 21-25 (26)
- 5) over 25 (2)
- 6) no answer (3)

13)

48	37	27
49	35	26
53	38	24
--	--	--
43	33	29
21	22	27
28	34	26
56	42	27
41	26	17
43	32	22

Field of specialization: secondary school

- 0) teaching (61)
- 1) bachillerato (112)
- 2) accounting/business (13)
- 3) blank
- 4) no answer (2)
- 5) languages (1)
- 6) religion (2)
- 7) agriculture (4)
- 8) secretarial (2)
- 9) commercial art (1)

14)

53	36	28
55	37	27
45	33	22
53	37	25
43	32	28
49	38	28
53	38	27
40	35	23
39	35	26
48	35	25

Field of specialization: university

- 0) law (41)
- 1) medicine (13)
- 2) did not attend (18)
- 3) business/accounting/administration (35)
- 4) journalism (6)
- 5) architecture/engineering (27)
- 6) agriculture (8)
- 7) humanities/fine arts (26)
- 8) seminary/social work (7)
- 9) teaching/education/pedagogy (17)

Question

49

cog. sk. develop. part.

15)

52	36	28
51	36	27
46	33	27
51	38	27
51	37	25
53	39	24
49	39	27
41	33	21
44	40	26
40	36	24

Present occupation/employment

0)	professions -law, medicine, professor	(54)
1)	administration, govt. and private	(39)
2)	journalist/publicist	(14)
3)	employee of central government	(21)
4)	business and banking	(20)
5)	agronomist	(6)
6)	employee of local government	(4)
7)	humanities, art, music, teaching	(29)
8)	architecture/engineering	(5)
9)	church	(6)

16)

38	33	24
44	35	25
49	36	25
51	37	26
52	37	27
61	37	29
51	36	27
60	33	29
52	33	27
46	34	21

Monthly income -Quetzals

0)	no answer	(14)
1)	100-300	(37)
2)	301-500	(51)
3)	501-800	(48)
4)	801-1000	(16)
5)	1001-1300	(10)
6)	1301-1600	(11)
7)	1601-2000	(4)
8)	2001-3000	(6)
9)	over 3000	(1)

17)

44	32	23
49	36	26
48	37	25
54	38	27
57	38	31
65	39	30
49	35	32

Number of jobs held in past five years

0)	none/no answer	(32)
1)	one	(71)
2)	two	(54)
3)	three	(30)
4)	four	(7)
5)	five	(2)
6)	six or more	(2)

Question

50

cog.sk. develop. part.

18)

46	45	28
49	36	27
48	36	25
52	35	24

Frequency of travel outside community

- 0) not answered (2)
- 1) frequently- at least once each week (93)
- 2) occasionally - one-three times per mo (80)
- 3) rarely; less than once per month (23)

19)

49	36	26
50	36	26
49	36	27
36	32	22

Father's activity in community affairs

- 0) very active; devoted much time and resources (67)
- 1) moderate: talked, aware, not participant (95)
- 2) inactive/unconcerned with community matters (29)
- 3) not answered/ did not know father (7)

20)

49	36	26
49	36	26
41	31	23

Mode of decision-making in family

- 0) decisions made by parent alone (78)
- 1) decisions made after discussion in family (110)
- 2) not answered (7)

21)

53	37	21
50	36	27
48	35	24
43	34	20

Frequency of reading newspapers

- 0) not answered (1)
- 1) twice daily or more (123)
- 2) daily (66)
- 3) weekly (7)

22)

--	--	--
48	40	27
52	36	28
46	35	29
45	29	25
40	36	25
49	38	26
45	34	23
50	39	23
54	35	24

Portions of newspaper read regularly

- 0) editorials alone (0)
- 1) editorials and commentary (5)
- 2) news and editorials; all phases, unspecified (76)
- 3) specified political matters (16)
- 4) "national" news primarily (1)
- 5) primarily international news (3)
- 6) national plus international
- 7) vaguely "everything," or "news" (54)
- 8) job-related, economic, agrarian, etc. (21)
- 9) not answered (3)

Question

51

cog. sk. develop. part.

23)

57 38 22
46 37 27
51 36 26
49 36 23
50 33 27

Frequency of listening to news on radio or television

- 0) not answered (1)
- 1) twice daily or more (60)
- 2) daily (85)
- 3) weekly (15)
- 4) rarely or never (36)

24)

51 38 25
50 36 27
46 37 23
50 35 18

Frequency of discussing current affairs with others

- 0) not answered (1)
- 1) daily (142)
- 2) weekly (41)
- 3) rarely or never (12)

25)

42 34 11
43 32 19
44 32 19
44 32 27
42 35 21
25 33 22
50 36 26
51 36 29

Usual companions in discussions of current affairs

- 0) not answered (1)
- 1) members of family (5)
- 2) working associates (10)
- 3) schoolmates (1)
- 4) friends (17)
- 5) organized discussion group (1)
- 6) two or three of these groups (117)
- 7) more than three of these classes (45)

26)

42 33 16
52 34 26
51 35 25
40 37 18
48 37 26
47 36 28
58 25 20
29 25 20

Focus of discussion of current events

- 0) not answered (3)
- 1) local matters (13)
- 2) national questions (59)
- 3) international questions (3)
- 4) two of these topics (58)
- 5) all three topics (56)
- 6) social problems
- 7) business matters (2)

Question

52

cog. ski. develop part.

27)

49	36	26
46	37	22
45	35	24

Reading other than newspapers: frequency

- 0) regularly (171)
- 1) weekly (16)
- 2) rarely or never (10)

28)

52	35	26
48	37	33
47	37	25
51	36	26
49	39	32
39	32	25
35	33	25

Type of material read besides newspapers

- 0) popular magazines -Time, Life, etc. (62)
- 1) political material (8)
- 2) job-related material (65)
- 3) popular mag. plus job-related material (4)
- 4) political material plus job-related (7)
- 5) academic materials (3)
- 6) not answered (5)

29)

49	34	20
49	36	27
41	35	19
49	29	25

Information level/national issues

- 0) not answered (4)
- 1) well informed (182)
- 2) aware but poorly informed (11)
- 3) uninformed/ unaware of events and issues

30)

43	32	18
50	36	27
43	35	20
--	--	--

Information level/ international issues

- 0) not answered (3)
- 1) well informed (173)
- 2) poorly informed but aware (22)
- 3) uninformed/unaware (0)

31)

42	29	14
50	36	26
34	31	17
--	--	--

Information level/ local issues

- 0) not answered (2)
- 1) well informed (187)
- 2) aware but uninformed
- 3) unaware- no answer

Question

53

cog. sk. develop. part.

32)

43	32	23
48	36	26
51	34	26
51	37	27
42	34	23
54	38	28
48	36	23
51	36	23
27	30	23
57	38	31

Designation: most serious problem facing Guatemala I

- 0) not answered (8)
- 1) instability, violence, factional strife (70)
- 2) specific social conditions -health, poverty, housing (12)
- 3) general soc. conditions: underdevelopment, production (40)
- 4) unclear, confusing answer (9)
- 5) distribution of wealth/ agrarian reform (23)
- 6) unemployment/job opportunities (20)
- 7) exclusion of Indians from society (7)
- 8) collapse of traditional morality (5)
- 9) population growth (4)

33)

36	33	24
49	36	28
50	36	25
50	34	29
58	34	24
50	39	26
34	44	15
42	34	24
56	35	25
38	34	15

Designation: second most serious problem in Guatemala

- 0) not answered (17)
- 1) underdevelopment, general econ. conditions (36)
- 2) illiteracy; educational reform (87)
- 3) political reform/elections (15)
- 4) common market; economic production (5)
- 5) poverty, unemployment, jobs (30)
- 6) pressure from developed nations (1)
- 7) excess bureaucracy, govt interference (3)
- 8) lack of capital, savings (3)
- 9) health

34)

30	35	23
47	37	24
57	37	28
43	34	25
47	36	26

Number of factors used to deal with social problems

- 0) not answered (5)
- 1) single-factor statement of source (65)
- 2) multi-factor account of origins (65)
- 3) irrelevant or unclear answer (53)
- 4) simple historical account (10)

Question

54

cog. sk. develop. ps

35)

30	35	23
49	36	25
54	36	28
38	35	24

36)

30	35	23
55	35	27
53	37	25
45	36	26

37)

37	35	24
60	36	28
49	37	24
42	35	26

38)

42	36	24
49	36	25
61	34	29
45	34	28

39)

43	35	25
54	36	27
38	38	24
43	36	26

Temporal orientation

- 0) not answered (5)
- 1) account wholly in present tense (66)
- 2) link between past and present (93)
- 3) answer not relevant to temporal dimension (34)

Reference to matters amenable to human control

- 0) not answered (5)
- 1) clear reference to factors man can control (68)
- 2) clear reference to factors man cannot control (24)
- 3) cannot determine from answer

Sequential structure of response-patterning of factors

- 0) not answered (6)
- 1) factors linked sequentially (61)
- 2) enumeration of unlinked factors (41)
- 3) cannot be determined from answer (90)

Number of factors involved in dealing with human intervention

- 0) not answered (40)
- 1) single-factor response (74)
- 2) multi-factor response (35)
- 3) unclear or irrelevant

Orientation to intervention in determination of present state

- 0) not answered (38)
- 1) specific reference to human intervention (105)
- 2) specific reference to extra-human agency (5)
- 3) unclear or irrelevant (50)

Question

55

cog. ski. develop. part.

40)

42	36	25
55	35	25
53	36	26
40	36	27
69	32	30

Generality-specificity of proposed intervention strategy

- 0) not answered (42)
- 1) specifics: taxes, school construction, etc. (35)
- 2) broad: revolution, reform, reorganization (85)
- 3) not clear or relevant (33)
- 4) both general and specific -illustrated (3)

41)

29	32	23
52	35	25
48	37	26
36	35	24
43	35	24
37	35	25
66	35	30
44	37	32
41	35	29

Proposed solution to present-day problems: structure

- 0) not answered (10)
- 1) specific and particular (57)
- 2) very broad and general solutions (73)
- 3) answer not relevant or clear
- 4) denial of solution (10)
- 5) spiritual approach: hope, pray, believe (2)
- 6) complex answer: general and specific (23)
- 7) better leadership (3)
- 8) revolutionary action

42)

34	33	22
47	35	22
49	40	25
44	39	25
36	34	25
57	35	26
47	37	26
61	36	29
47	39	27
42	33	28

Mode of intervention required by suggested solution

- 0) not answered (19)
- 1) simple allocation of resources (17)
- 2) technological change, new techniques (5)
- 3) no short-run solution (7)
- 4) vague or unclear (20)
- 5) resources plus technology (35)
- 6) radical reform, social change, unspecified (22)
- 7) rational cooperation, planning, study (39)
- 8) specific reforms, education/treasury, etc. (25)
- 9) participation, democracy (9)

43)

36	33	22
47	36	24
63	36	29
43	37	26

Sequentiality in proposed solution

- 0) not answered (21)
- 1) discrete factors cited (53)
- 2) clear sequentiality, connections and pattern (56)
- 3) irrelevant or unclear (67)

Question

56

cog. sk. develop. part.

44)

36	34	23
48	38	29
56	36	27
44	36	26

Social change agent in proposed solution of problem

- 0) not answered (23)
- 1) "the people" general population (10)
- 2) elites, particularly government (93)
- 3) unclear or irrelevant

45)

34	34	24
48	36	25
63	36	28
43	37	26

Temporal linkages: proposed solution to problem

- 0) unclear or irrelevant (28)
- 1) reference to present only (85)
- 2) linkage between present and past
- 3) reference vaguely to past, not linkages (35)

46)

22	32	20
51	36	26
45	36	25
58	37	27
45	36	27

Counterfactuals: could problem be avoided

- 0) not answered (5)
- 1) avoidable by human action (115)
- 2) not avoidable (46)
- 3) perhaps; conditional (13)
- 4) unclear or irrelevant

47)

42	36	25
49	38	24
49	38	24
68	35	30
54	36	26
58	38	32
43	36	25
52	33	20
38	35	29
48	35	34

Counterfactuals: specification of factors

- 0) not answered or question-begging (69)
- 1) vague reference to social change (17)
- 2) application of law, repression of dissidents (7)
- 3) complex, study, reason, coordination (6)
- 4) unspecified action by past government (71)
- 5) better education, attitudinal change in popl. (7)
- 6) unclear or irrelevant (12)
- 7) better technology (3)
- 8) different kind of government (4)
- 9) free elections, participation (2)

Question

57

cog. sk. develop. part.

48)

30	35	23
44	37	26
44	36	25
45	37	25
42	39	29
63	36	30
52	36	25
37	32	24
37	37	25
53	37	25

Solution to problem: summary of response content

- 0) no answer (13)
- 1) general reform, nonrevolutionary, or society (30)
- 2) not possible to do much on short run (14)
- 3) suppression or repression by law (5)
- 4) radical, usually violent, reform (5)
- 5) rational action, discussion, planning study (41)
- 6) specific reforms, land, currency, taxes, educ. (60)
- 7) unclear or meaningless (20)
- 8) emphasis on spiritual, moral, artistic values (3)
- 9) competitive market syndrome

49)

25	28	19
44	35	22
52	36	28
51	36	30
44	41	27
52	37	26
65	35	31
42	34	31

Role of individual in problem solving

- 0) not answered (7)
- 1) there is little or nothing he can do (60)
- 2) work at regular employment or profession (65)
- 3) publicize problems; let people know (24)
- 4) contribute to revolution, no specification (3)
- 5) vaguely -collaborate, take part (24)
- 6) study, the engineer's approach generally (10)
- 7) political participation, voting (4)

50)

43	35	22
50	37	28
69	36	31
48	36	27

Number of factors involved in solution

- 0) not answered (73)
- 1) single-factor solution (24)
- 2) pattern or sequence of actions (26)
- 3) unclear or irrelevant response

51)

42	35	22
56	37	29
52	36	28
47	36	26

Social structure employed in solution

- 0) not answered (72)
- 1) through some organization (46)
- 2) by individual actions (52)
- 3) unclear or irrelevant (26)

Question

58

cog. sk. develop. part.

52)

42	35	22
53	37	29
53	35	28
46	36	26
75	36	32

Mode of response, general or specific, in solution to problem

- 0) not answered (71)
- 1) general: social justice, support for revolution (63)
- 2) specific: jobs, voting, organize particulars (26)
- 3) unclear or irrelevant (30)
- 4) general and specific actions (8)

53)

43	35	22
70	35	29
51	37	28

Awareness of cost in solution to problem

- 0) not answered (73)
- 1) specific awareness and reference to cost (12)
- 2) no reference to social/individual cost (108)

54)

43	35	22
53	37	29
55	35	27
44	37	26
65	36	31

Type of action proposed in solution: symbolic/concrete

- 0) not answered (74)
- 1) symbolic act, no direct consequences (40)
- 2) concrete action, direct consequences (24)
- 3) unclear or irrelevant (39)
- 4) both concrete and symbolic acts (21)

55)

37	32	23
52	36	26
51	38	27
43	35	24
45	35	27
52	36	27

Experimental attitude: reaction to failure of suggestions

- 0) not answered (22)
- 1) suggest new solutions/review work for error (76)
- 2) insist on suggestions, persist (58)
- 3) give up, join opposition, do nothing (10)
- 4) vague and unclear response (20)
- 5) continue to work as before

56)

42	34	24
59	35	28
44	38	26
45	37	24

Experimental attitude: learning from experience

- 0) not answered or unclear (43)
- 1) clear evidence of learning (69)
- 2) no evidence of learning (59)
- 3) unclear or uncertain ;change proposed but no reason (27)

Question

59

	<u>cog. sk.</u>	<u>develop.</u>	<u>part.</u>	
57)				Experimental attitude: impact of failure
	39	34	24	0) not answered (35)
	46	36	25	1) discouragement: withdraw proposal (17)
	52	36	27	2) no evidence of discouragement (145)
58)				Connect present and past: historical event with greatest influence on the present in Guatemala
	34	31	22	0) not answered (9)
	50	36	26	1) obvious reference: conquest, 1871 and 1944 rev. (167)
	44	34	22	2) unclear or irrelevant response (9)
	55	35	25	3) dictatorships, negatively cited (6)
	27	31	13	4) foreign influence (U.S.A.) (1)
	44	33	27	5) complex of unspecified events (2)
	42	42	26	6) none (1)
	61	45	32	7) particulars: labor code, social sec. (2)
	67	25	26	8) treatment of Indians by Ladinos (1)
59)				Projection of present on future: selection of events
	29	32	23	0) not answered (7)
	38	35	25	1) unclear, unintelligible (16)
	49	34	27	2) specifics: elections, Honduras war, etc. (54)
	51	37	26	3) Central American integration (39)
	53	37	27	4) violence and guerilla actions (19)
	63	35	29	5) present org. of society (5)
	50	39	25	6) agrarian reform (14) reference is to present action
	51	36	26	7) education, roads, social welfare (38) (present)
	44	32	23	8) population growth (3)
	46	37	18	9) foreign interference (3)
60)				Abstract/concrete focus: projection of present on future
	39	34	25	0) not answered (26)
	51	36	26	1) abstract: technology, social organization, etc. (84)
	45	32	21	2) concrete: roads, schools, etc. (8)
	50	36	27	3) human behavior (elections, violence) (64)
	64	37	32	4) both abstract and concrete
	51	39	24	5) unclear or uncertain (11)

Question

60

cog. sk. develop. part.

61)

38	34	25
49	37	25
47	36	22
48	36	26
42	39	28
52	36	26
75	35	30

Static/dynamic aspect of projection on the future

- 0) not answered (22)
- 1) change in organization (39)
- 2) technological change (9)
- 3) not related to change: static (76)
- 4) conceptual change (3)
- 5) institutional change (41)
- 6) complex of dynamic changes (8)

62)

34	34	24
50	35	27
49	37	25
51	35	25
48	36	25
48	37	24
67	35	30

Conceptual focus: projection on future

- 0) not answered (18)
- 1) political emphasis (68)
- 2) economic focus (68)
- 3) violence/stability (13)
- 4) moral needs (4)
- 5) educational and social questions (17)
- 6) study, planning (10)

63)

37	34	24
49	37	25
49	36	26
71	35	30
33	33	25

Generality/particularity of projection on future

- 0) not answered (18)
- 1) general features: stability, reform (62)
- 2) particulars: elections, etc. (101)
- 3) general and particulars (13)
- 4) unclear or irrelevant

64)

31	29	25
49	36	26
45	35	23
54	37	26
42	33	27
33	33	28
62	34	26
40	37	28

Counterfactuals: results of eliminating imports/exports

- 0) not answered (5)
- 1) "utter chaos," but unspecified (94)
- 2) "bad consequences," unspecified (21)
- 3) serious crisis; paralysis of nation (44)
- 4) irrelevant or unclear
- 5) improvement of living conditions (2)
- 6) detailed specification of economic effects (11)
- 7) "unthinkable" (9)

Question

61

cog. sk. develop. part.

65)

43 33 24
50 37 27
63 36 27
47 36 25
37 34 27

Counterfactuals: capacity for imaginative projection

- 0) little evidence of projective capacity (21)
- 1) projection in gross macroscopic terms only (50)
- 2) clear evidence of capacity for detailed projection (30)
- 3) emotional response without factual base (78)
- 4) not answered (19)

66)

38 34 27
43 36 25
62 36 28
49 36 25
43 40 24
47 32 18

Counterfactuals: strength of statement about consequences

- 0) not answered (21)
- 1) weak statement (34)
- 2) strong and specific statement (36)
- 3) strong affective and vague (102)
- 4) strong denial of impact, cognitively poor (3)
- 5) weak statement of limited range of impacts (2)

67)

37 34 25
36 37 24
63 35 28
48 35 27
45 36 25
49 37 25
55 35 25

Counterfactuals: simplicity/complexity of concept of impact/
on self

- 0) not answered (19)
- 1) clearly unable to cope with problem (6)
- 2) rich, complex, detailed (35)
- 3) vague, general, not specific (35)
- 4) woolly: "everyone affected" (64)
- 5) specific impact on limited area (business) (25)
- 6) denial of impact on self (14)

68)

41 34 26
60 36 26
53 35 27
48 36 28
45 37 25
45 36 26

Counterfactuals: specification of intervening variables

- 0) not answered (34)
- 1) fairly persuasive statement of connections (42)
- 2) assumed links; no demonstration (37)
- 3) dogmatic denial of connection (no argument) (3)
- 4) folklore accepted uncritically (53)
- 5) unclear or irrelevant answer

Question

62

cog. sk. develop. part.

69)

35	31	26
49	39	28
47	35	26
47	36	25
53	39	29
55	39	26
76	35	28
48	34	26
48	34	24
50	37	22

Relating present to future: How to speed development?

- 0) no answer; unclear (15)
- 1) improve social and economic org. generally (18)
- 2) improve educational system (36)
- 3) productivity; agrarian reform (43)
- 4) study and planning (22)
- 5) complex, multi-dimensional response (23)
- 6) clearly integrated and organized complex answer (6)
- 7) reform governmental structure (12)
- 8) encourage industry, create jobs (22)
- 9) discourage foreign influence and investment (1)

70)

35	30	25
49	37	25
47	36	26
65	36	29

Intervention strategy for development: scope

- 0) not answered, unclear (12)
- 1) limited: specific suggestions (build schools) (24)
- 2) broad response, no clear implications for action (133)
- 3) complex response; clear implications for action (29)

71)

36	32	27
46	36	25
52	37	27
74	37	32

Intervention strategy: number of factors in response

- 0) not answered (12)
- 1) single-factor response (95)
- 2) multi-factor response (83)
- 3) complex, integrated suggestion (8)

72)

34	29	26
60	41	30
47	37	31
49	36	26
66	37	27

Intervention strategy: agent of change

- 0) not answered (9)
- 1) government (7)
- 2) private persons (5)
- 3) no agency stipulated or inferrable (171)
- 4) both public and private agencies stated (6)

Question

63

cog. sk. develop. part.

73)

34	29	27
47	36	25
49	35	27
42	38	27
47	35	26
62	37	28

Intervention strategy: focus of concern

- 0) not answered (8)
- 1) economic matters (91)
- 2) political or governmental affairs (21)
- 3) vague, sloganized (14)
- 4) education (31)
- 5) two or more factors (33)

74)

32	29	26
51	37	26
43	35	26
51	36	26
43	37	32
30	31	18
41	30	22
34	33	20

Selecting an assistant: Factors involved -personality/performance

- 0) not answered (5)
- 1) test work capacity alone (44)
- 2) test personal characteristics only (14)
- 3) test both personal and work qualities (118)
- 4) rely on expert advice (weasel) (5)
- 5) refer to past performance (2)
- 6) test "at work" (5)
- 7) unclear or irrelevant

75)

40	35	24
52	36	27
69	36	30
39	33	21

Coder's subjective estimation of cognitive quality of response

- 0) poor: bare, stilted, no details (93)
- 1) average: occasional good answer, some implications (70)
- 2) exceptional: detailed, complex, accurate (33)
- 3) could not be graded (2)

76)

43	33	26
50	36	26
56	37	28
38	34	27
38	33	21

Selection of asst: relation of task and capacity or skill

- 0) not answered (15)
- 1) concern for competence, no specification (142)
- 2) clear link between task and requirements (24)
- 3) little evidence of concern for performance (8)
- 4) vague and uncertain response (9)

Question

64

77)

cog. st. develop. part.

43 22 27
44 34 25
51 38 26
51 36 26
32 32 19

Overall focus of criteria used to evaluate performance

- 0) not answered (11)
- 1) primary focus on personality (18)
- 2) primary focus on performance (53)
- 3) concerned with both personality and performance (106)
- 4) unclear or irrelevant

78)

42 33 27
51 36 26
54 34 27
48 40 26
52 33 27
41 30 21
37 31 23
43 35 20
35 36 23
45 35 27

Projective capacity: worst conceivable disaster in Guatemala in next five years

- 0) not answered (9)
- 1) civil war, more violence (72)
- 2) economic chaos, market collapse, currency deval. (16)
- 3) economic stagnation, no change (51)
- 4) dictatorship (27)
- 5) communist takeover (8)
- 6) natural disaster (volcano, earthquake) (11)
- 7) no real catastrophe possible (2)
- 8) anti-intellectualism (1)
- 9) socialist government (1)

79)

49 35 27
49 37 25
46 35 24

Importance of future in present concerns

- 0) not clear in context, not answered (87)
- 1) genuine concern (97)
- 2) hardly serious in context

80)

46 34 28
45 37 25
51 38 25
51 35 26
47 40 32
43 36 25

Focus of future concern

- 0) not answered (10)
- 1) military affairs (16)
- 2) economic matters (39)
- 3) political matters (102)
- 4) socio-political/economic (2)
- 5) unclear or irrelevant (29)

Questioncog. sk. develop. part.

1)

first digit of identification number

0) 0
1) 1
2) 2

2)

Second digit of identification number

0) 0
1) 1
2) 2
3) 3
4) 4
5) 5
6) 6
7) 7
8) 8
9) 9

3)

Third digit of identification number

0) 0
1) 1
2) 2
3) 3
4) 4
5) 5
6) 6
7) 7
8) 8
9) 9

4)

Card Number

0) 1
1) 2

Question

	<u>cog. st.</u>	<u>develop.</u>	<u>part.</u>
5)			
6)	42	32	26
	49	38	26
	49	34	26
	51	33	23
	51	35	27
	48	38	26
	57	37	25
	56	33	26
	36	27	23
7)			
	28	25	21
	49	36	26
8)			
	21	22	27
	47	39	28
	50	35	25
	42	31	28
9)			
	29	23	21
	46	38	28
	49	36	25
	43	31	34
10)			
	49	36	26
	45	34	26
	52	33	25

Blank

Changes sought for next generation in Guatemala: Focus

- 0) not answered (18)
- 1) general: better development, productivity (71)
- 2) security: peace, no violence (29)
- 3) moral improvement, respect for person (8)
- 4) better educational facilities (35)
- 5) better access to education for everyone (23)
- 6) peace plus educational access (7)
- 7) peace plus better educational facilities (6)
- 8) maintenance of free enterprise system (1)

Preference: land and bldgs - investment in education

- 1) agree (5)
- 2) disagree (193)

Preference: young should make decisions without regard for opinions of elders.

- 0) not answered (1)
- 1) agree (51)
- 2) disagree (142)
- 3) indifferent (4)

Preference: encourage conflict and disagreement, even at risk of violence

- 0) not answered (1)
- 1) agree (29)
- 2) disagree (165)
- 3) indifferent

Preference: Every man has obligation to save for future

- 0) agree (182)
- 1) disagree (11)
- 2) indifferent (5)

Question

67

	<u>cog. sk.</u>	<u>develop.</u>	<u>part.</u>	
11)				Preference: if some members of society are growing richer, others must be growing poorer
	42	28	24	0) not answered (4)
	48	38	27	1) agree (94)
	51	35	25	2) disagree (96)
	37	28	24	3) indifference (4)
12)				Preference: No man should become heavily involved in community affairs if he has not yet taken care of his own family.
	31	30	24	0) not answered (6)
	50	35	24	1) agree (94)
	49	38	28	2) disagree (93)
	50	34	28	3) indifferent (5)
13)				Preference: people in Guatemala waste too much time, this is a serious problem.
	33	26	24	0) not answered (5)
	49	36	26	1) agree (169)
	48	34	25	2) disagree (24)
14)				Preference: Doing without builds character in man
	37	27	24	0) not answered (5)
	51	36	26	1) agree (105)
	46	36	26	2) disagree (83)
	54	33	25	3) indifferent (5)
15)				Preference: Laws that violate principles of conscience should be disobeyed.
	35	28	24	0) not answered (5)
	50	36	27	1) agree (106)
	48	37	25	2) disagree (83)
	47	34	28	3) indifferent (4)

Question

68

cog. sk. develop. part.

16)

Preference: those who do not take an active part in the community life should be punished

21 22 27
50 38 27
49 34 25
46 33 28

0) not answered (1)
1) agree (79)
2) disagree (112)
3) indifferent (6)

17)

Preference: A steady job is better than a higher-paying job with higher risk of a layoff

47 32 26
49 36 25
51 37 27
45 33 27

0) not answered (8)
1) agree (125)
2) disagree (37)
3) indifferent (9)

18)

Preference: The government should be able to locate trained men such as doctors where they are needed

35 30 25
50 36 26
49 34 24

0) not answered (9)
1) agree (170)
2) disagree (18)

19)

Preference: Private organizations usually perform social tasks more efficiently than public agencies

56 33 25
50 34 25
47 39 27
47 33 27

0) not answered (8)
1) agree (107)
2) disagree (74)
3) indifferent (9)

20)

Preference: The man who sacrifices family to society deserves high praise and not blame.

44 31 25
48 37 27
50 34 24
57 33 30

0) not answered (8)
1) agree (118)
2) disagree (66)
3) indifferent (6)

Question

69

cog. sk. develop. part.

21)

54 31 25
48 34 25
49 38 26
50 33 29

Preference: In important matters, practical experience is more useful than formal education

- 0) not answered (6)
- 1) agree (85)
- 2) disagree (99)
- 3) indifferent (8)

22)

48 34 24
49 36 26
51 39 24

Forced choice:

- 0) establish business enterprise (20)
- 1) enter profession (176)
- 2) no answer (2)

23)

47 35 26
51 36 26
47 36 27

Forced choice:

- 0) reduce foreign influence in Guatemala (101)
- 1) secure foreign assistance for Guatemala (93)
- 2) made no choice

24)

49 34 28
49 36 25
45 37 26

Forced choice:

- 0) secure political rights for population (56)
- 1) more welfare for population (138)
- 2) made no choice (4)

25)

49 36 26
48 34 24
59 34 27

Forced choice:

- 0) encourage Guatemalans to form coops. (166)
- 1) encourage formation of private business (24)
- 2) made no choice

26)

47 34 27
50 36 26
44 32 27

Forced choice:

- 0) invest in capital goods and machinery (22)
- 1) invest in health, education and welfare (164)
- 2) made no choice (11)

Question

70

cog. sk. develop. part.

27)

49 36 26
49 34 25
50 35 28

Forced choice:

- 0) save as much as possible for tomorrow (151)
- 1) try to live well today, tomorrow uncertain (41)
- 2) made no choice (6)

28

49 35 25
47 37 26
65 33 33

Forced choice:

- 0) don't trust people until you know them (110)
- 1) most people can be trusted (85)
- 2) made no choice (3)

29)

46 35 26
49 36 26
45 29 25

Forced choice:

- 0) teach children to win, even in everyday things (25)
- 1) teach children to play game well (172)
- 2) made no choice (1)

30)

51 35 27
48 37 25
51 34 29

Forced choice:

- 0) keeping promises less important than intending to (82)
- 1) promises must be kept at all costs, dishonor (111)
- 2) no choice (5)

31)

30 25 15
49 36 26
42 38 23

Forced choice

- 0) failures should be forgotten quickly (3)
- 1) failures should be studied to avoid error (194)
- 2) made no choice (1)

32)

27 24 19
49 36 26
44 34 24

Forced choice:

- 0) common people have little influence in local affairs (2)
- 1) common people have much influence if they cooperate (194)
- 2) no choice

33)

45 34 24
50 36 26
45 38 28

Forced choice:

- 0) increase power of central government (22)
- 1) increase power of local government (171)
- 2) made no choice

Question

71

cog. sk. develop part.

34)

	1		
46	32	21	
49	36	26	
40	29	28	

Forced choice:

- 0) improve Guatemalan prestige abroad (7)
- 1) improve internal social conditions (186)
- 2) made no choice (5)

35)

49	33	25	
49	37	26	
54	32	28	

Forced choice:

- 0) teach men to improve their own lives (34)
- 1) teach men to regard the rights of others (153)
- 2) made no choice (11)

36)

50	37	27	
48	35	25	
62	29	26	

Forced choice:

- 0) progress as rapidly as possible, risking conflict (82)
- 1) progress more slowly, avoiding conflict (113)
- 2) made no choice (3)

37)

49	36	26	
46	40	29	
49	34	30	

Preference: Individual should provide food, clothing and shelter for family without governmental assistance

- 0) agree (183)
- 1) disagree (13)
- 2) no answer (2)

38)

51	34	26	
46	39	26	
--	--	--	

Preference: Individual should be responsible for his own employment, not the government

- 0) agree (129)
- 1) disagree (67)
- 2) no choice (2)

39)

49	33	25	
48	39	27	
--1	--	--	

Preference: Individual should education children without assistance from government

- 0) agree (111)
- 1) disagree (85)
- 2) did not answer (2)

Question

	<u>cog. sk.</u>	<u>develop</u>	<u>part</u>	
40)				Preference: Individual should care for aged members of the family without governmental assistance
	49	32	25	0) agree (63)
	49	38	26	1) disagree (133)
	—	—	—	2) no answer (2)
41)				Preference: Individual should provide medical care for family without governmental assistance
	49	33	24	0) agree (106)
	49	39	27	1) disagree (90)
42)				BLANK
43)				Preference: Individual should protect his own property without assistance from government
	48	32	25	0) agree (66)
	49	38	26	1) disagree (130)
44)				Preference: Individual should provide for his own travel and recreation without governmental assistance
	50	36	26	0) agree (174)
	43	37	25	1) disagree (22)
45)				Preference: Individual responsible for family discipline, no governmental interference
	49	36	26	0) agree (186)
	43	38	25	1) disagree (10)

Question

73

cog. sk. develop part

46)

40	33	24
47	35	26
51	36	26
46	37	23
52	42	32
41	31	26
41	39	28
42	34	27
48	37	24
55	33	22

Where would you turn for help if you were in trouble?

0)	church (11)
1)	friends (33)
2)	family (129)
3)	local government (3)
4)	friends/local government (1)
5)	family/church
6)	not answered (6)
7)	depends on problem (5)
8)	self, no outside agency (3)
9)	specialist-expert (3)

47)

46	34	25
48	38	31
50	36	25
51	34	25
49	41	27
54	36	29
52	38	26
39	36	22
25	27	24
41	37	28

Difference between your aspirations and father's aspirations

0)	no answer, did not know father (53)
1)	self is more political (5)
2)	self more professional than business (9)
3)	no difference (46)
4)	self more concerned with social than family (33)
5)	not comparable (27)
6)	educational matters, particularly children (15)
7)	self more concerned with cultural matters (8)
8)	parent less future oriented (1)
9)	self more concerned with education (1)

48)

44	29	24
51	35	27
46	35	28
49	38	25
40	31	24
47	34	25
56	38	23
44	32	28
45	37	26
66	36	28

Differences between aspirations for self and children?

0)	not answered (13)
1)	no difference (63)
2)	fewer sacrifices for children (9)
3)	aspirations higher, particularly educational (74)
4)	no children, hence irrelevant (4)
5)	vaguely, better society, justice (19)
6)	better social consciousness (6)
7)	vaguely, more freedom (7)
8)	improved job opportunities (2)
9)	education plus social awareness (1)

cog. sk. develop part

49)				Individual responsibility: should you intervene to prevent cruelty to children by another person
	49	36	26	0) yes (195)
	42	34	11	1) no (1)
50)				Individual responsibility: should you aid a policeman chasing a thief?
	46	35	27	0) yes (35)
	50	36	26	1) no (161)
51)				Individual responsibility: should you intervene if there is a serious fire or accident
	49	36	26	0) yes (187)
	48	31	25	1) no
52)				Individual responsibility: should you aid handicapped beggar in streets?
	47	37	26	0) yes (117)
	51	35	26	1) no (79)
53)				Individual responsibility: should you do something if a serious increase in juvenile delinquency occurs?
	49	37	26	0) yes (148)
	49	33	25	1) no (48)
54)				Individual responsibility: should you do something if there is a serious earthquake?
	49	37	26	0) yes (176)
	50	31	25	1) no (20)
55)				Individual responsibility: must you act to aid poverty and fear?
	49	36	26	0) yes (169)
	46	32	25	1) no (15)
	--	--	--	2) not answered (14)

Question

75

cog. sk. develop part

56)				trust/suspicion: if you passed a disabled auto at night, would you stop to help? What would you do?
	49	33	28	0) not answered (8)
	47	36	24	1) keep going (119)
	51	37	29	2) stop, unqualified (38)
	54	37	28	3) stop, cautiously (22)
	55	37	29	4) stop if accident had occurred (4)
	55	38	33	5) stop in day, not night (2)
	41	31	30	6) depends on location (2)
	51	33	27	7) stop if driver is known (2)
57)				Participation/awareness: Is there a group for promoting education in your area?
	49	36	27	0) yes (158)
	46	33	21	1) no (38)
58)				Participation/awareness: group promoting better health?
	51	36	28	0) yes (111)
	46	36	24	1) no (85)
59)				Participation/awareness: cultural group?
	49	36	27	0) yes (170)
	46	37	21	1) no (27)
60)				Participation/awareness: group aiding cooperatives?
	51	36	28	0) yes (117)
	45	36	23	1) no (80)
61)				Participation/awareness: welfare group?
	51	35	28	0) yes (137)
	44	37	22	1) no (60)

Question

76

cog. sk. develop part

62)

48 36 26
59 34 24
36 27 33
46 34 21
74 34 31

Participation/awareness: other groups in area?

- 0) not answered, negative (189)
- 1) women's rights (4)
- 2) community improvement (1)
- 3) chamber of commerce
- 4) youth groups (2)

63)

48 36 27
50 36 22

Participation: are you active in any groups?

- 0) yes (142)
- 1) no (54)

64)

51 35 23
49 36 27
42 33 29
49 33 29
55 35 28
49 38 25
51 36 29
43 34 23
52 37 30
50 35 30

Participation/locus: what groups are you active in?

- 0) not answered (59)
- 1) social welfare (20)
- 2) health (4)
- 3) education (19)
- 4) health plus education (3)
- 5) cooperatives (8)
- 6) two groups (12)
- 7) cultural (31)
- 8) three groups (14)
- 9) all groups available (28)

65)

50 36 28
47 36 22

Participation: have you ever tried to organize a group in comm?

- 0) yes (139)
- 1) no (57)

66)

48 36 28
50 36 23

Participation: have you ever been an official in a group?

- 0) yes (131)
- 1) no (66)

67)

48 36 27
49 37 21

Participation: do you contribute time, work, or money?

- 0) yes (169)
- 1) no (28)

Question

77

	<u>cog. sk.</u>	<u>develop</u>	<u>part</u>	
68)				Participation: are you member of political organization?
	51	38	31	0) yes (47)
	48	35	24	1) no (146)
	62	29	26	2) not answered (5)
69)				Participation: do you vote regularly in elections?
	50	36	27	0) yes (174)
	44	35	22	1) no (23)
70)				Participation: Have you taken part in campaign?
	52	37	30	0) yes (67)
	47	35	24	1) no (127)
71)				Participation: ever candidate for public office?
	53	35	30	0) yes (35)
	48	36	24	1) no (160)
72)				Participation: ever held appointive or elective office?
	50	38	28	0) yes (93)
	47	34	24	1) no (103)
73)				Participation: would your family be better off if you spent less time on community affairs?
	52	35	31	0) yes (38)
	48	36	25	1) no (152)
	70	32	25	2) not answered (8)
74)				Could you find different work if you left your present job?
	49	36	26	0) yes (184)
	46	35	26	1) no (9)
	42	29	25	2) not answered (5)

Question

78

75)

cog. sk. develop part

43	35	24
50	37	26
47	33	24
53	36	29

What kind of work other than present job can you do?

- 0) not answered (16)
- 1) same profession (148)
- 2) different professions (28)
- 3) both same and different kinds of work open (6)

Index Preparation Instructions

Cognition skill index Count each response as indicated; index is sum of all points.

<u>Card/Question</u>	<u>Response</u>	<u>Points</u>	<u>Card/Question</u>	<u>Response</u>	<u>Points</u>		
I 32	9	3	I 44	2	1		
	5	3		45	2	2	
	7	3			1	1	
	1	2		46	3	1	
	2	2		47	3	3	
	6	2			5	2	
	3	1			7	2	
	33	4		3	48	2	3
		2		2		5	3
		3		2		6	2
		5		2		7	1
		9		2		9	1
		1		1	49	6	2
		6		1		2	1
		7		1		3	1
8		1		7	1		
2		2	50	2	2		
1	1		1	1			
34	2	2	51	1	2		
	1	1		2	1		
35	2	2	52	4	2		
	1	1		1	1		
36	1	1		2	1		
37	1	2	53	1	3		
	2	1	54	4	2		
38	2	2		2	1		
	1	1	55	1	2		
39	1	1		2	1		
40	4	3	56	1	2		
	1	2	58	5	3		
	2	1		1	2		
	2	1		3	2		
	2	2		7	2		
	7	2		8	2		
	8	1		4	1		
	41	6	3	59	3	2	
		4	2		4	2	
		1	2		6	2	
2		2		7	2		
7		2		8	2		
8		1		5	1		
42		7	3		2	1	
		5	3	60	5	2	
		1	2		1	1	
		2	2		2	1	
	3	2		3	1		
	8	2		6	2		
	9	2					
	6	1					
	43	2	2				
		1	1	61	6	2	

Cognition skill index (cont)

<u>Card/Question</u>	<u>Response</u>	<u>Points</u>
I 62	2	1
	5	1
63	4	2
	1	1
64	2	1
	3	2
	6	2
65	3	2
	2	1
66	2	2
	5	2
67	1	1
	3	1
	2	3
	5	2
	3	1
68	4	1
	1	2
	4	3
	5	3
69	6	3
	1	1
	2	1
	3	1
	7	1
	8	1
	3	2
	1	1
70	3	3
	2	2
71	1	1
	4	2
72	1	1
	5	2
73	1	1
	2	1
	4	1
74	1	3
	2	2
	3	2
	5	1
	6	1
75	3	5
	2	2
76	1	2
	2	1
77	2	2
	3	1

<u>Card/Question</u>	<u>Response</u>	<u>Points</u>
I 78	1	2
	2	2
	3	2
	4	1
	5	1
	6	1

II 6	6	2
	7	2
	2	1
	5	1
	6	1
	7	1
	12	2
	18	1
	21	2
	31	3

Developmental Attitudes IndexCard/Question Response Points

I	29	1	2
		2	1
	30	1	2
		2	1
	31	1	2
		2	1
	32	9	1
		7	1
		6	1
		5	1
		1	1
		2	1
		3	1
	33	1	1
		2	1
		3	1
		4	1
		5	1
		9	1
	48	1	1
		5	1
		6	1
		9	1
	69	1	1
		2	1
		3	1
		7	1
		4	2
		5	2
		6	2
		8	2
	73	1	1
		2	1
	74	1	1
	77	2	1
	78	3	2
		2	1

II	6	1	1
		2	1
		4	1
		5	1
		6	1
		7	1
	7	2	1
	8	1	1
	9	1	1
	10	1	1
	11	2	1
	12	2	1
	13	1	1
	14	1	1

Card/Question Response Points

II	15	2	1
	16	1	1
	17	2	1
	18	1	1
	19	2	1
	20	1	1
	21	2	1
	23	1	1
	24	1	1
	26	1	1
	28	1	1
	29	0	1
	30	1	1
	31	1	1
	32	1	1
	34	1	1
	35	1	1
	36	0	1
	37	1	1
	38	1	1
	39	1	1
	40	1	1
	41	1	1
	43	1	1
	46	3	1
		4	1
		7	1
	47	1	1
		6	1
		7	1
		8	1
		9	1
		4	2
	48	3	2
		6	2
		8	2
		9	2
	49	0	1
	51	0	1
	53	0	1
	54	0	1
	55	0	1

Participation IndexCard/Question Response Points

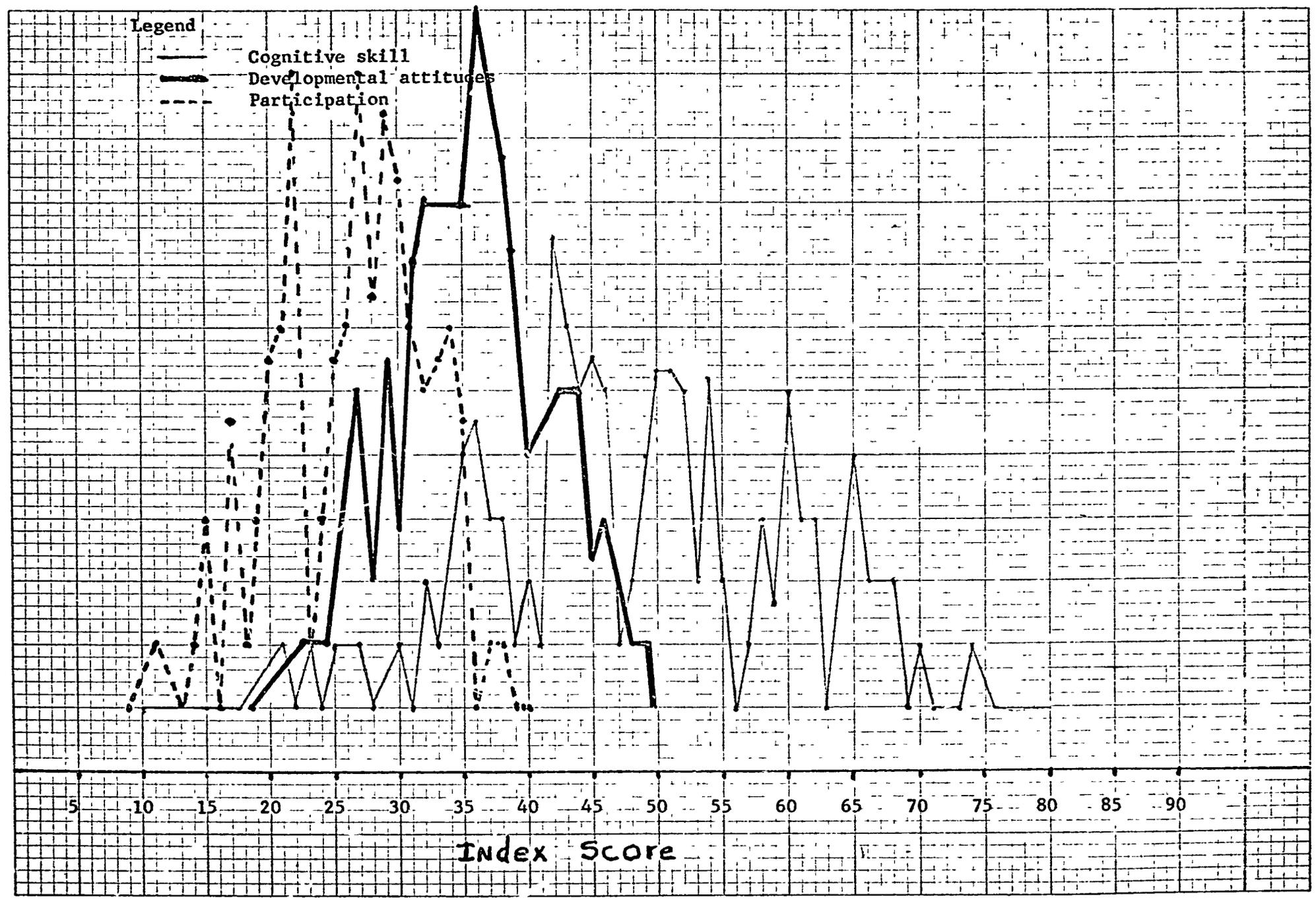
I	21	1	2
		2	1
	22	1	1
		3	1
		4	1
		5	1
		2	2
		6	2
	23	1	2
		2	1
	24	1	2
		2	1
	25	6	1
		7	1
		5	2
	26	1	1
		2	1
		3	1
		5	2
		4	2
	27	0	1
	28	1	1
	29	1	1
	30	1	1
	31	1	1
	32	1	1
	33	3	1
	41	1	1
		8	1
	42	7	1
		8	1
		9	1
	47	3	1
		9	1
	48	4	1
		5	1
		6	1
	49	7	1
		2	2
		3	2
		6	3
	51	1	2
		2	1
	54	1	1
		2	2
		4	2

II	11	2	1
	16	1	1
	18	1	1

Card/Question Response Points

II	20	1	1
	24	1	1
	25	0	1
	32	1	1
	64	1	1
		2	1
		3	1
		4	2
		5	2
		6	2
		8	3
		9	3
	65	0	1
	66	0	1
	67	0	1
	68	0	1
	69	0	1
	70	0	1
	71	0	1
	72	0	1
	73	0	2

No
10 Squares to
inch



Fourth Questionnaire

COGNITION SKILL, DEVELOPMENTAL ATTITUDES, PARTICIPATION

Part I - Background information

1. Name of respondent
2. Sex
3. Ethnicity: indian/ladino
4. Age
5. Location where reared: rural area/town of less than 5,000/ city outside the capital/ Guatemala City.
6. Present place of residence: rural area/ town of less than 5,000/ city outside capitol, Guatemala City.
7. Father's occupation
8. Languages spoken in family home: Spanish/ Indian/ English/ European other than Spanish/ Other
9. Size of family
10. Marital status
11. Number of children
12. Number of years of education
13. Curriculum: Secondary school/ university
14. Present occupation
15. Monthly income
16. Number of jobs held in past five years.
17. Frequency of travel outside community of domicile.
18. Extent of father's activity in community affairs.
19. Father's occupation
20. Mode of decision-making in father's family: father alone/ consultation
21. Frequency of newspaper reading
22. Parts of newspaper read regularly
23. Frequency of listening to new on radio or television
24. Frequency of discussion of current affairs with others.
25. Identification of discussants of current affairs: family/work assoc./ schoolmates/ friends/ organized groups/ other
26. Questions most frequently discussed.
27. Regular reading other than newspapers: journals/books/bulletins, pamphlets, etc.
28. Information level about national affairs: detailed data and assessment of significance/ awareness of issue, no details/ unaware of issue, vague.
29. Information level about current international problems.
30. Information level, local issues.

Part II. Cognition patterns

31. Identify the two most serious problems presently facing the people of Guatemala and their government.
32. Select one problem. Why does this problem exist at present?

Fourth questionnaire

33. Do you believe the problem could have been avoided?
34. What could be done about the problem now?
35. Is there anything you (interviewee) can do about it now?
36. If suggestions are made: Suppose they failed, what would you do next?
37. Looking back at Guatemalan history, what events do you think have most influenced present day socio-political-economic conditions?
38. Looking ahead, what events in present-day Guatemala do you feel will have the greatest impact on the country's future?
39. What would happen in Guatemala if imports and exports were suddenly stopped?
40. How would you be affected by such actions?
41. If you were choosing an assistance from among five applicants, what questions would you ask? What tests would you use?

Part III - Developmental attitudes

42. What are the two changes you would most like to see in Guatemala in the near future?
43. Are they likely to occur?
44. What is the worst thing that could happen in Guatemala in the next 5 years?
45. Agree/disagree: It is better to invest in land and buildings that can be passed to the next generation than to invest in education.
46. The young should make their own decisions and not wait for their elders to act.
47. Conflict and disagreement should be encouraged even though they may lead to violence.
48. Every man has an obligation to save some of his earnings for the future.
49. No man should become heavily involved in community affairs until he has taken care of his own family's needs.
50. If some members of society are growing richer, others must be growing poorer.
51. One major problem in Guatemala is that people waste too much time.
52. It is good for people to learn to do without things
53. Laws should be disobeyed if they violate principles of conscience.
54. Persons who do not take an active part in community life should be punished.
55. A steady job with lower pay is better than a job that pays more but may not last.
56. The government should be able to locate specialists like physicians where they are needed.
57. Private organizations can perform social tasks more efficiently than public agencies.
58. Leaders should not propose policies that will cause disagreements among their followers.
59. The man willing to sacrifice his family interests to the benefit of society deserves high praise.
60. In important matters, practical experience is more important than formal education.

Choice: forced

61. establish a business/enter a profession
62. reduce foreign influence in Guatemala/ secure foreign assistance
63. secure political rights/ provide welfare programs
64. encourage cooperatives/ encourage private business
65. invest in machinery and capital goods/ invest in education and welfare--

Fourth questionnaire

66. save for tomorrow/ live well today
67. do not trust people until you know them well/ most people are trustworthy
68. teach children to try to win in everything/ teach children to play the game
69. keep promises at all costs/ the intention is more important than promise-keeping
70. forget failures as quickly as possible/ study failures to see where errors were made
71. common people have little influence in politics/ common people have much influence if they act together.
72. Increase the power of national government/ increase local authority
73. improve Guatemalan prestige abroad/ improve social conditions within Guatemala
74. teach men to improve their own lives/ teach men to regard the rights of others
75. identify the tasks that are the responsibility of the individual alone, and not the responsibility of government:
- providing food, clothing, and shelter for family
 - securing employment
 - educating children
 - caring for the aged.
 - providing medical care for the family
 - protecting family property
 - providing travel and recreation for the family
 - punishing misbehavior
76. If you were in serious trouble, where would you turn for help?
- church
 - friends,
 - family
 - government
 - other
77. How do your aspirations differ from those your father held when he was your age?
78. Are your aspirations for your children different from those you hold for yourself?
79. Would you intervene on moral grounds in any of the following: Do you feel you are responsible in any way for?
- cruelty to a child
 - a policeman's pursuit of a thief
 - a serious fire or accident
 - a handicapped beggar
 - an increase in juvenile delinquency
 - serious poverty and suffering in society
80. If you were driving late at night and passed a stalled car, would you stop?

Part IV - Behavior and participation

81. Are there any citizen's groups concerned with the following problems in your area (the answers are factually positive in all cases).
education/health/cultural affairs/cooperatives/roads/ other
82. Are you active in any of these groups?
83. Identify the groups.
84. Have you ever tried to organize a community group?

Fourth questionnaire

85. Have you ever been an officer in a community organization?
86. Do you contribute time or money to civic organizations?
87. Do you belong to a local or national political organization?
88. Do you vote regularly in local or national elections?
89. Have you ever taken part in an election campaign?
90. Have you ever held elective or appointive office?
91. Have you ever been a candidate for public office?
92. Would your family be better off if you spent less time on community matters?
93. Could you find different employment if you wished to change jobs?
94. If yes, specify type of work.