

COGNITIVE STYLES IN AFRICAN CULTURES:
THE GLOBAL-ARTICULATED DIMENSION

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ABSTRACT

COGNITIVE STYLE IN AFRICAN CULTURES: THE GLOBAL-ARTICULATED DIMENSION

By

Richard L. Hovey

This study was an investigation of the interaction of culture and cognitive style. The model of cognitive style developed by H. A. Witkin was used to analyze cultural data. The results of the analysis revealed which part of the global-articulated continuum was fostered by the culture of a society. The sample and the cultural data analyzed, came from Robert Textor's, A Cross-Cultural Summary. Fourteen African societies were analyzed on the information available for four hundred fifty-seven cultural items of Textor. A descriptive composite of factors that influence the development of cognitive style was derived from the works of Witkin and others who have used his model. The composite was matched with Textor's items to ascertain which items were manifestations of cognitive style. Examination of the data for these items revealed which items were the greatest contributors to a global or an articulated cognitive style.



An additional analysis for the relationship of cognitive style and cultural variables was carried out with the remaining Textor items. The results of both analyses gave rise to the following conclusions:

1. For the cultural variables that were deemed manifestations of cognitive style, it appeared some variables were more significantly associated with one direction of the dimension than with the other direction. (Societies which manifest a high total positive pressure toward developing achievement behavior in the child were found to be associated with the articulated direction. On the other hand, societies associated with the global direction may be found to be either high or low in total positive pressure toward developing achievement behavior.)

2. For the cultural variables that were deemed manifestations of cognitive style it appeared that some variables were more significantly associated with the differences between the two directions of the continuum than were other variables. (Community organization of a kin-homogeneous type was found to be highly associated with the global direction; while community organization of a kin-heterogeneous type was found to be highly associated with the articulated direction.)

3. For the cultural variables that were not deemed manifestations of cognitive style, it appeared that some variables were more significantly associated with one

direction of the dimension than with the other direction. (Segregation of adolescent boys which is complete or partially complete was found to be concomitant with the articulated direction. Some societies manifesting a global style were found associated with the variable; while others demonstrated no such association.)

4. For the cultural variables that were not deemed manifestations of cognitive style, it appeared that some variables were more significantly associated with the differences between the two directions of the continuum than were other variables. (A plentiful supply of food related significantly to articulation. The lack of plentiful food supply was found to be associated with the societies manifesting the global direction of the global-articulated dimension.)



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By
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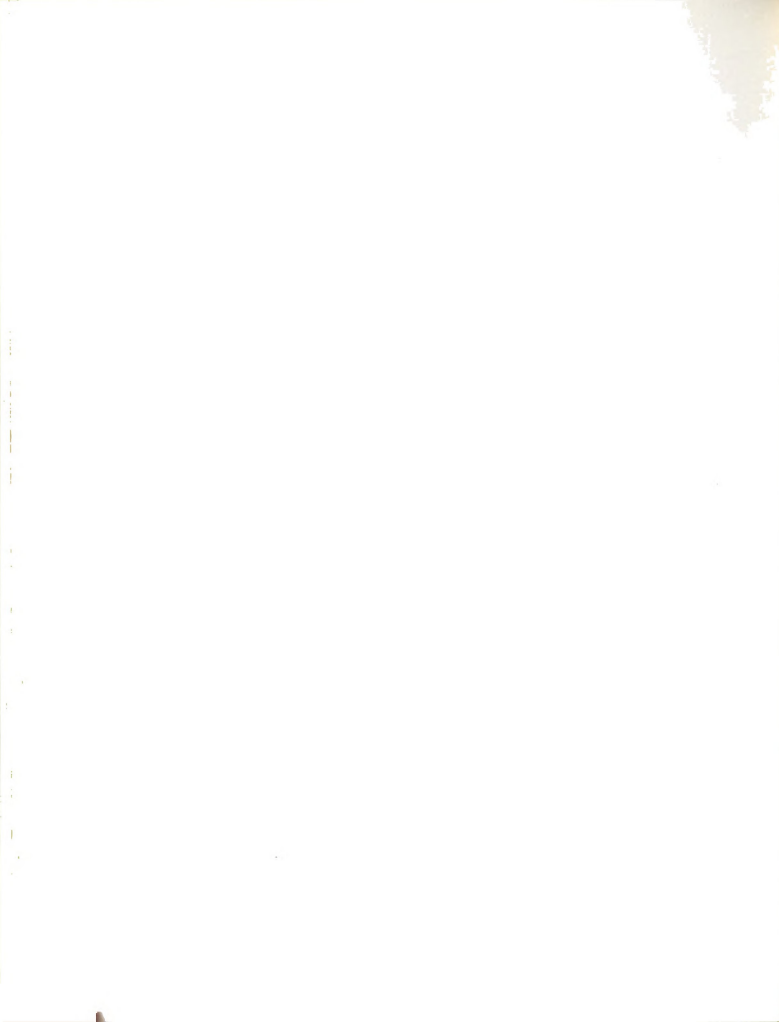
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Listen and I shall tell you what you must do. After my father has given you the terrible dragons teeth for sowing bathe alone in the waters of the river, put on black garments and dig a circular pit. Within this heap a pyre, slaughter a ewe lamb and burn it to ash. Then offer a libation of honey to Hecate, dripping it from your cup, and leave the pyre. Do not turn around for any step you may hear, or for the bark of a dog, otherwise, the sacrifice will be in vain. The following morning salve yourself with this magic ointment. It bestows great power and incredible strength. You will feel equal not only to men, but even to immortals.

Medea's advice to Jason

Gustav Schwab, Gods and Heroes: Myths and Epics of Ancient Greece (New York: Pantheon Books Inc., 1946), pp. 115-116.



CHAPTER I

INTRODUCTION AND THEORETICAL BACKGROUND

Introduction

The relation of cognitive style to selected African cultures will be explored in this paper. The first part of Chapter I, will serve as an introduction to the problem. Clarification of the terms used and explanations of the purpose and need of such a study are presented. Some background to the development of education in the newer independent African countries will be tendered to provide an example that illustrates the need.

In the rest of this chapter, a theoretical foundation for the study will be constructed. An attempt will be made to show the assumptions utilized from the two concepts of culture and cognition and how a synthesis of these can be functional in the analysis of the way people intellectualize. Also the work of H. A. Witkin on cognitive style will be explained.

Purpose

The purpose of this study is to ascertain the intellectual patterns of selected African societies. The psychological construct of cognitive style as put forth by the

studies of H. A. Witkin and his co-investigators will be the yardstick to describe the intellectual patterns of the African societies. In addition to the description mentioned above, this study will attempt to find whether certain cultural variables can be found to be associated with the descriptive cognitive styles of the African societies. Translated into questions these purposes become:

1. What is the nature of the cognitive style of African societies?
2. What cultural variables, other than those identified in question one, seem to be found concurrent with the cognitive styles described for the African societies?

Need for the Study

Regardless of the particular theory of learning an educator may espouse, there is a universal agreement that knowledge of the child is a desirable feature on which to build his education. Knowledge of the child's past experiences, physical environment (nutrition and health) and socio-cultural forces that act as motivators or inhibitors of education are necessary, if one is to make wise decisions about pedagogical matters. Unfortunately in Africa this perspective on the foundations of education has not flourished. The basic studies relating the social sciences

to education have for the most part been ignored. A quick perusal of bibliographies that are concerned with education or the intellectual abilities of Africans reveal an emphasis on methodology.¹ Most frequently the social science research that has been undertaken has been for the pragmatic solving of the selection problem. Educational psychologists have " . . . been concerned with an evaluation of individual differences and of their consequences on the functioning of school systems rather than a measurement of the productivity of colonial educational institutions."² There have been independence movements to change the inherited educational systems into "African" systems; but the movements have been mostly talk and any motion in that direction has been blunted by more immediate technical needs. The knowledge of how to Africanize will be needed in the future. This study will hopefully add to the sources available to make future decisions of how to fit the school and teaching to the children and not together.

¹For reference see: L. E. Andor, Aptitudes and Abilities of the Black Man in Sub-Saharan Africa 1784-1963 (Johannesburg: National Institute for Personnel Research, 1966); S. H. Irvine, J. J. Sanders, and E. L. Klingelhofer, Human Behavior in Africa: A Bibliography of Psychological and Related Writings (London, Ontario: University of Western Ontario, 1970); David Scanlon, "Education," The African World: A Survey of Social Research (New York: Praeger, 1965), pp. 199-220.

²Remi Cliquet, "Psychological Research in Africa: Significance and Method," Northwestern University, Dept. of Sociology. (Mimeographed.)

Background Illustration Demonstrating The Need

Countries, like individuals, may embark on bold journeys to achieve what they perceive as their Golden Fleece. A charismatic leader may ignite the energies of the people, or a nationalist movement may generate a mass single party which will mobilize the population. Or even a third possibility is that an educated and modernized elite,--on inheriting the reins of political authority--may push, pull or drag the majority into the march for modernity and development. Any of these three or still other paradigms of activation may nudge a country to movement.

During the sixties as colonial African countries achieved political independence they faced great problems in the spheres of economics, politics and social relations. Development became the goal and education was seen as the key means to achieve the goal. In the initial stages, a certain euphoria due to newly won independence permeated the scene. Advice was asked for (or often just given), radiating optimism for giant strides of progress. The African was seen as being able to achieve in several generations what other nations had taken centuries to acquire.

Basically, two assumptions were accepted as iron laws of development. One emphasized the role of the economy. Rostow's stages were seen as a true portrayal of reality. The consequence of this was that experts analyzed the means of production,

distribution and consumption of wealth in the new countries and formulated ways of improving these systems. Considerable amounts of money or goods were directed toward developing those sectors that in the economic scheme were essential for the sparking of the "take-off." The second assumption concerned the role of technical knowledge in development. It seemed reasonable to believe that technical knowledge had made industrial countries successful. Conversely, the undeveloped countries, it was felt, were poor, because of lack of this expertise. So massive injections of technical know how was deemed an essential of development. By far one of the most important commodities was educated and skilled manpower. On the education scene, this meant facilities had to be built and operated to turn out products that could satisfy the national developmental requirements.

From May 15-25, 1961, African Ministers of Education met in Addis Ababa for the purpose of clarifying the educational needs and to develop programs to meet these needs. Targets were set for a long-term plan (1960-1980) and a short term plan (1960-1965). Additional conferences and meetings at Tananarive, Paris, Abidjan and Nairobi were held in subsequent years to further formulate programs and evaluate progress. The most widely adopted course of action has been the utilization of manpower techniques and the expansion of the educational system inherited from the colonial administration.

Ten years after the Addis Ababa conference some authors feel it is not too cynical to conclude that African education today is not much advanced over what it might have been if there had been no conferences.³ The process has not been smooth or regular. As these modern Jasons in search of their golden fleece have trod the fields sowing their seeds, hosts of complex problems have risen to thwart progress. There seems to be a constellation of conditions that could be categorized as an anti-development syndrome. Each manipulation of the system designed to better fulfill the quota of product quantity and quality makes acute, certain questions that were minor or non-evident before the adjustment. Expansion of the system opens complex problems of financing, recruitment and training of teachers, maintenance of quality and issues of how much and what types of education are needed both as a minimum for the masses and as qualifications of the elite. Utilization of the educational system for political development has brought a focussing of attention on the capabilities of the schools to achieve differentiation, equality and capacity.⁴ Men such as Coombs and Adams and Bjork have labored over the

³C. A. Anderson and Philip Foster, "The Outlook for Education in Middle Africa," Africa in the Seventies and Eighties, ed. by F. Arkhurst (New York: Praeger, 1970), p. 305.

⁴James Coleman, Education and Political Development (Princeton, New Jersey: Princeton University Press, 1965).

symptoms and described the pathologies attacking educational development in the newly independent countries of the world.⁵ Preshkin has catalogued the verbalizations of patients and diagnosticians.⁶ Any or all of the categories these men discuss are worthy areas for research. An awareness of interactional factors between men of different technologies, different attitudes and different values has started to foster a modifying of technical and economy planning with consideration of social and cultural factors. Sociology and economics have fostered a viewpoint of schools that have yielded understanding and progress in developed countries. The same research could be undertaken in African schools.

Yet of all the problems that must be handled by the new African Ministries of Education, one stands out. The inability of many students to finish school by graduation, is a pervasive and major concern. Table 1.1 illustrates the seriousness of the problem. Why does this happen? Surely there is evidence that indicates the importance of schooling, especially schooling of a continuing and long duration. UNESCO has established the number of school

⁵Philip Coombs, The World Education Crisis: A Systems Analysis (New York: Oxford University Press, 1968).

⁶A. Preshkin, "Education in the Developing Nations: Dimensions of change," Comparative Education Review, Vol. 10 (1966), pp. 53-66.

TABLE 1.1.--Dropout rates for primary school children in selected African countries.

Country	Time period	Number of 100 primary 1 pupils, who persist to primary 6 or beyond
Cameroon	1958-62	38*
Chad	1965-71	32
Congo (Brazzaville)	1965-71	13
Ethiopia	1961-68	17
Ghana	1962-67	64
Kenya	1956-62	30
Lesotho	1961-67	29
Malawi	1958-65	27
Niger	1963-69	60
Senegal	1963-68	93
Sierra Leone	1963-69	39
Tanzania	1961-67	42
Uganda	1963-68	66

* Primary 5 figure.

Source: The Education Projects Department, International Bank for Reconstruction and Development (World Bank).

years needed for the establishment of functional literacy (a condition considered an essential skill for the modernization process).⁷ The UNESCO figure coincides with an earlier study by a group on British tropical African Education. Collins pointed out that the author of the study felt " . . . four years is the minimum to give the average child literacy. They concluded that the extent of the wastage in East African schools is so great that it detracted very largely from the efficiency of the school system and led to an immense waste of money and of good human material."⁸ B. H. Sen, Director General of FAO has stated: "It is axiomatic that a literate farmer has a much better chance of understanding a reform and development program. . . . The progress of any development plan for agriculture depends to a large extent on overcoming the obstacle of illiteracy."⁹ If a man is able to participate in the mass media of the printed word his horizons widen considerably. Available to him is information that will permit the development of new opinions and sound

⁷Wm. Gray, The Teaching of Reading and Writing (Switzerland: UNESCO monographs of Fundamental Education, 1956), p. 27.

⁸Sidney Collins, "The Social and Economic Causes of Wastage in Schools and Other Educational Institutions in Tanganyika," Teacher Education, Vol. 5, No. 1 (1964), p. 40.

⁹Floyd Shacklock, World Literacy Manual (New York: Committee on World Literacy and Christian Literature, 1967), p. 1.

decision-making. It is then possible to develop an effective two way channel of exchange between the formulators and those who toil to achieve, the quotas of progress. The people will be able to understand what the government is trying to do and hopefully the government will be fully aware of what the masses think and desire.

Waisanen and Kumata have demonstrated how the effect of formal education can produce, after varying durations in different countries, a developmental curve of rapid acceleration in individual participation.¹⁰ Waisanen has stated the role of schooling as " . . . leading to the acquisition of literacy skills, becoming aware of alternative behavioral modes and recognizing the possibility of manipulability of one's life trajectory."¹¹ Inkeles has stated that the schools are the most powerful medium for development of behavioral sets, designed as the active or participant citizenship syndrome.¹² His work has revealed that of several variables, education is the single most important modernizing influence. Exposure to work in a factory runs a strong second with urbanism indicated as not a strong

¹⁰F. B. Waisanen and Hideya Kumata, "Education, Functional Literacy and Participation in Development," Paper presented at Society for Applied Anthropology, Mexico City, 1968.

¹¹F. B. Waisanen, "Education and Participation in Development," Acta Sociologica, 1971 (forthcoming).

¹²Alex Inkeles, "Participant Citizenship in Six Developing Countries," American Political Science Review, Vol. LXIII, No. 4 (Dec. 1969), pp. 1120-1141.

modernizing influence.¹³ There is even evidence that in non-Western societies the course of intellectual development of the non-schooled will follow courses different from those who attend school. Bruner has demonstrated that the transition from a perceptual to a conceptual mode, typical of children in the West, is not characteristically achieved by unschooled non-Western children. Their development typically precedes to a finely differentiated form of perception rather than abstract conceptual thinking.¹⁴

Thus it would appear that the question of wastage is an important one. Unless some resolution of this can be reached, it appears a formidable obstacle to the achievement of the developing countries' goals. So again it is asked, why does this wastage happen? At first glance at least five reasons seem reasonable as causes that could account for such a high percentage. First is the expense involved to the student and his supporters. In some countries, a fee is required from the student. This fee will become progressively dearer as the student advances. Some of the wastage then may be due to the costs involved. But

¹³Alex Inkeles, "Social and Cultural Aspects of Development," Final Report on Grant AF-AFOSR-1094-66, Harvard University: Center for International Affairs, July 1967-June 1968.

¹⁴Jerome Kagan and Nathan Kogan, "Individual Variations in Cognitive Processes," Carmichael's Manual of Child Psychology, ed. by Paul Mussen (3rd Edition; New York: John Wiley and Sons, Inc., 1970), p. 1291.

it is doubtful that the impact of this factor is very great. Generally at the primary level the school fees are very minimal and constitute only a small per cent of the projected income of a rural peasant. Secondly, the number of countries in which a fee is required is very small and are the exceptions rather than the rule. Thirdly, there are countervailing forces to the lack of individual ability to pay in the forms of community pooling of resources or stocking of extended family resources to finance children who indicate a promising future. There are also grants or aid from voluntary organizations available.

A second factor causing wastage could be the lack of conviction on the part of the parent as to the value of education agitated in some cases by the pressing demands of the subsistence economy with its concomitant family structure of each member as a producing unit. Part of this is undoubtedly explainable by use of Margaret Read's analysis of education and social change in Africa.¹⁵ Those societies which have had slight contact with Western influences are only at the first or second step of her analysis. Again it could be stated that the input of this variable in reducing the wastage rate is probably not too great. Several conditions mitigate for this conclusion. Even through primary education for all children is the aim of most

¹⁵Margaret Read, Education and Social Change in Tropical Areas (London: Nelson, 1956).

African countries, legislation has not been enacted to make formal schooling compulsory. Thus in vast areas where the parents wishes or the economic patterns are such that they mitigate against school attendance, the children do not enter. They are never counted on the enrollment census and thus contribute nothing to a drop-out figure. If they do enter school it is likely that their numbers constitute but a small proportion of the total enrollment and they probably discontinue their schooling in the early years of primary school.

Certainly nutritional factors along with illness account for some of the wastage. Conditions of endemic malaria, parasites and diets composed mainly of carbohydrates all operate to enervate the child and thus lesson his learning capacity and ability to continue in school.¹⁶ It is difficult to justify but it is my feeling that this too contributes but little to the dropout rate. First it should be pointed out that infant mortality is still extremely high in most African societies. In 1968, the Vice Chancellor of Ahmadu Bello University in Nigeria

¹⁶There are a number of good articles that cover this with some nebulous conclusions. For reference see: P. H. Abelson, "Malnutrition, Learning and Behavior," Science, Vol. 164, No. 3875 (April 4, 1968), p. 17; S. Champakam, S. G. Srikantia, and C. Gorpulan, "Kwashiorkor and Mental Development," American Journal of Clinical Nutrition, Vol. 21 (1968), pp. 844-852; J. Cravioto, "Nutritional Deficiencies and Mental Performance in Childhood," Environmental Influences, ed. by David Glass (New York: Rockefeller University Press, 1968).

stated that of one hundred babies born, by age five, fifty per cent remain. Those that are extremely debilitated by these environmental factors never enroll in school, they do not live that long. For the rest that do make it to five, by this time a marvelous symbiotic relationship between host and parasites has developed. Though the parasites may have an overall effect of shortening the life span and even hindering normal maturational processes by the delimiting of energy available, they do not stop one from attending school.

A fourth factor could be the lack of enthusiasm for education of girls. When a girl reaches puberty, this often is the point of termination of her schooling. I can remember the explanation of a Uganda father as to why he would not send his daughter beyond primary school. While gesturing to indicate the development of breasts he exclaimed: "When this happens there is no point in sending the girl, for she will only become pregnant." Years back when secondary schools for girls were starting in northern Nigeria, the girls had to be locked in their quarters at night to prevent them from running away. The influence of Islamic cultural forces concerning the role of women and the place of women is still strong in many African countries. Purdah is an accepted way of life and it is only crumbling slowly. Even the educated parent has

ambivalent feelings about education for girls. Such attitudes contribute little to wastage for they are manifested in the girls never entering school in the first place, or her education is terminated somewhere near the end of primary school. Therefore, part of the girls disappearance from the academic scene may be as drop-outs due to early puberty but also may be viewed as ordinary primary school leavers, who never attempt to enter secondary school.

Yet another factor contributing to the drop-out rate is poor teaching. This is particularly true at the primary school level. Frequently the teacher is only barely superior to the student. He is poorly versed in the informational aspects of education and is even worse in pedagogical acumen and psychological understanding of child development and learning. Undoubtedly the tyranny of teachers who force children to work in the teacher's garden or perform other tasks for the teacher's benefit, contribute to the child's unhappiness with schooling. But this aspect accounts for only a small proportion of drop-outs. The rationale behind this is that the practice is in tune with the deference patterns of child-adult relations and so accepted. The lack of psychological understanding and pedagogical acumen is a far more serious point and probably is causative of

some portion of the drop-out rate. A strong case can be made for the teacher's lack of understanding of the child. The frequent practice of posting teachers in areas away from their native locale fosters misunderstanding. Whatever training is given in psychology probably increases the misunderstanding rather than decreasing it. Fox remarks of her East African experiences in Makerere University, an institution offering diplomas in Education, that books and information on psychology used as part of the teacher's education consisted only of " . . . a wide and varied collection of Western references in the fields of psychology and child development dealing with children about the West."¹⁷ It seems likely that if prospective teachers do learn anything of psychology, it is the psychology of Western personality behavior. In explanation, therefore, of the relative effect on drop-out rate, the same rationale as stated above could be used to justify a small contribution here. Only those insufficiently socialized into the traditional ways would experience dissatisfaction over this and thus become the alienated youth, who drops out.

Though I have attempted to minimize the effect of the above five causes on the drop-out rate, it does not mean that in toto these factors do not add up to a

¹⁷L. K. Fox, "Learning Ventures in East Africa," Childhood Education, Vol. 41 (1965), p. 343.

significant portion. Instead, it is to indicate that in my estimation there is a sixth factor which alone is the most significant as a cause of wastage. This factor is an incompatibility of the school (a Western style institution) with the culture of the student. Several meanings can be related to this statement. There is for example, the idea that it is the content of the curriculum which causes the difficulty. Likely this is what Margaret Mead is alluding to when she states the problem of educational emphases. She thinks it is " . . . the shift from learning what every one agrees every one would want to know, to teaching what some think others should know. . . ." ¹⁸

Content is not that to which I refer. Rather it has to do with the pervasive influence of the culture on the behavior of an individual. Cultures are man-made patterns of behavior which function in adaptive ways to enable a group of people to exist. They superimpose on the developing youth modes or styles of viewing the world. Cultures are the filters that screen the multiplicity of stimuli impinging on the organism. Those stimuli which fit into the culturally organized nature of the world selectively pass into the consciousness of the individual and are utilized to orientate and determine how the individual will behave. Different cultures may inculcate

¹⁸ Margaret Mead, "Our Educational Emphasis in Primitive Perspective," American Journal of Sociology, Vol. XLVIII, No. 6 (May 1943).

convergent of divergent modes of behavior. McLuhan's hypothesis of the aural, non-Western man and his behavior in contrast to the visual Western man is the sort of cultural influence indicated. When he states " . . . cultural ecology has a reasonably stable base in the human sensorium, and that any extension of the sensorium by technological dilation has a quite appreciable effect in setting up ratios or proportions among all the senses,"¹⁹ he is referring to the same phenomenon as suggested in the chapter. Though I feel he places an undue emphasis on the technology of the media, he properly identifies cultural influence on behavior. This is particularly true at the intellectual level or the level of how one thinks. All institutions of a culture are but reflections at the micro-level of the broader cultural patterns. Therefore, schools originating in the Western world will reflect the intellectual patternings of Western cultures. These patterns may or may not be convergent with the intellectual patterning of African societies. It is my belief that to a greater or lesser degree they are convergent depending on the particular African society one is investigating.

Rosalie Cohen, in an analysis of American schools, noted school requirements as defined by the standardized

¹⁹ Marshal McLuhan, The Gutenberg Galaxy (New York: The New American Library Inc., 1969), p. 48.

tests of intelligence and achievement call for three abilities.²⁰ These are (1) breadth and depth of informational content; (2) the ability to abstract analytically, and (3) the ability to extract salient information from its embedding contexts. In order for children to be successful at these Cohen has found, through examination of relevant psychology and linguistic literature, that a particular mode of selecting and organizing stimuli is demanded. She has further found that not all children operate in this mode. Those who utilize different modes are the ones having difficulty in school and account for a high percentage of the drop-outs.

Definitions

Culture.--"That complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society."²¹

Psychological differentiation.--A process that occurs in an individual as he ages and his range of experience expands. It involves a decreasing interdependence of parts in the structure of the person and

²⁰Rosalie Cohen, "The Relation Between Socio-Conceptual Styles and Orientation to School Requirements," Sociology of Education, Vol. 41, No. 2 (Spring 1968), pp. 201-220.

²¹Edward Tylor, Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art and Custom, Vol. 1 (Gloucester, Mass.: 1958), p. 1.

the relation of that structure to the external world. Thus the individual and his surrounding field in the beginning constitute an amorphous mass, eventually events are seen as separate but functionally related to all other experience either directly or indirectly.

Cognitive style.--"The characteristic self-consistent modes of functioning found pervasively throughout an individual's cognitive activities (perceptual and intellectual)."²²

Articulated field approach.--"Style of functioning which involves the ready ability to overcome an embedding context and to experience items as discrete from the field in which they are contained."²³

Global field approach.--"Style of functioning that involves submission to the dominant organization of the field and the tendency to experience items as 'fused' with their background."²⁴

²²H. A. Witkin, "A Cognitive-Style Approach to Cross-Cultural Research," International Journal of Psychology, Vol. 2, No. 4 (1967), p. 234.

²³H. A. Witkin, R. B. Dyk, H. F. Faterson, O. R. Goodenough, and S. A. Karp, Psychological Differentiation: Studies of Development (New York: John Wiley and Sons, Inc., 1962), p. 80.

²⁴Ibid., p. 80.

Theoretical Foundations

The platform from which this investigation projects is firmly anchored in two disciplines that intertwine with each other. The fields of anthropology and psychology have contributed greatly to the assumptions and raison d'etre of this study.

From Psychology

From the discipline of psychology comes a viewpoint of men and knowledge subsumed under the study of cognition. Cognitive psychology is a general rubric that encompasses several distinctly differing points of view. Essentially, however, cognition means " . . . the way human beings perceive and learn, how they reason and think, even how they remember and imagine; and how their 'minds' work in the ordinary day to day activities of life."²⁵ The concept is more meaningfully understood, if it is thought of not as a process, but as a problem area under the rubric of perception theory. Perception theory is concerned with those psychological problems where an effort is made to explain the various alternatives of response by associating the alternatives to more systematic variation in stimulation. There are two aspects of this problem area: sensation and cognition. Sensation deals with the sensory equipment of an organism and the incoming energy forms, such as light,

²⁵F. H. George, Cognition (London: Methuen & Co. Ltd., 1962), p. 11.

sound, odor, etc. Questions of how the energy is received and translated into new energy forms fall under the purview of sensation. Cognition, however, focuses not on the energy but the information or meaning given to or conveyed by energy inputs. Thus questions of acquiring and processing information and the cognitive consequences of the processing and utilization of the information are concerns of cognition. Some theorists of cognition deal with the components and elements of the field while still others attempt to conceptualize the ways in which the components relate to one another. Since cognition deals with information and its utilization, the concept has important ramifications for learning and education. Much of what follows is based upon the thinking of Kurt Lewin as described by Morris Bigge.²⁶ Lewin's work centered on a relativistic view of man and the learning process. Since he incorporates both the cognitive theory of how people gain an understanding of themselves and their environment, with field theory, which centers on the idea that all psychological activities of a person occurs in a field, his theory is often called the cognitive-field theory of learning. The essential features of his theory can be summarized as follows:

²⁶ Morris Bigge, Learning Theories for Teachers (New York: Harper and Row Publishers, 1964).

1. Perception and reality are defined relativistically--that is reality is what a person gains through his five senses and the way in which he sizes it up. The latter process is determined by the individual needs, abilities, purposes and insights, as well as what is "out there."
2. Behavior is purposeful--the assumption is made that intellectual behavior is affected by an individual's goals and that activity is directed to the achievement of these goals. Thus as the individual undertakes activity " . . . a relationship will develop between what he achieves in one trial (his level of achievement) and where he sets his next goal (his level of aspiration)."²⁷
3. An emphasis is placed on psychological function or events--it is felt that to understand the individual an effort must be made to see the world through the eyes of the learner and the pattern of person-environmental relationships in his mind.
4. There is a situational emphasis--a study always must be initiated with a description of the entire situation and then proceed to a specific

²⁷Ibid., p. 188.

and detailed analysis of various aspects of the situation.

5. Behavior follows the principle of contemporaneity--an individual's views are influenced significantly by the physical and social world not only of the present but of the past and ideas of the future.

From these principles, Lewin visualizes the individual as surrounded by a life space with which he is constantly interacting, in order to formulate goals and modes of activity. The life space is a psychological world made up not of physical entities but of functional relationships. The individual is a self that emerges from the social living of an organism and continues to change throughout life. There is a continual expansion of the life space of an individual as he encounters new situations that extend his world of understanding. As Biggs states "through his interactive process each person acquires such achievements as language, conceptual thinking and moral, social and religious predispositions and insights."²⁸

From Anthropology

From anthropology comes the concept of culture. When E. B. Tylor first defined culture as the "complex whole which includes knowledge, belief, art, morals, law,

²⁸Ibid., p. 195.

custom and any other capabilities and habits, acquired by man as a member of society,"²⁹ he laid the foundations for two major anthropological theories of culture. These theories are the theory of "culture patterns" and the theory of "social structure." This study firmly adheres to the culture patterns theory as it was formulated by A. L. Kroeber and Clyde Kluckhohn.³⁰ They recognized that culture is not an entity but rather an abstraction based on the observed phenomena of human behavior. It was noted that the variations in behavior between members of different cultures didn't vary capriciously or at random. Rather the observed behavior of men " . . . varies within a finite range of what is known at a specific time and place and newly introduced features are modified to fit what already is current to the local society."³¹ Each culture consists of an integrated whole that forms a pattern of behavior. Each man though he has the power to act as an individual, is in fact limited in his course

²⁹Edward Tylor, Primitive Culture, "Researches into the Development of Mythology, Philosophy, Religion, Art and Custom," Vol. 1 (Gloucester, Mass.: 1958), p. 1.

³⁰A. L. Kroeber and Clyde Kluckhohn, "Culture: A Critical Review of Concepts and Definitions," Papers of the Peabody Museum, Harvard University, Vol. 47, No. 1, 1952.

³¹Douglas Haring, "Anthropology: One Point of View," Personal Character and Cultural Milieu, ed. by D. A. Haring (Syracuse, New York: Syracuse University Press, 1964), p. 16.

of action, by the cultural resources available. His actions are drawn upon the cultural pattern of his society. Thus in a way as Kluckhohn states, "It is as if the basic pattern of the culture must be reflected in the internal structure of each individual person: as if the individual were in some sense a microcosm and the culture to which he belongs a macrocosm."³² Kroeber attempted to distinguish a hierarchy of patterning that pervades different areas of human activity. He formulated that subsistence and residence were the primary or systematic patterns. They are patterns which have persisted for several thousand years as coherent organizations of traits with functional value. Above the primary patterns are a number of traits which are subject to greater variety and instability. These traits Kroeber calls secondary patterns. They consist of formal social organization and systems of thought. The combination and interaction of the primary and secondary patterns leads to super patterns which come to pervade all or most spheres of some cultures and impart to them a distinctive unique slant. A number of anthropologists have undertaken studies which try to relate culture patterns to individual behavior and personality structure. Early in the 20th century, Richard Thurnwald tentatively advanced a theory based on psychological differences between tillers of the

³² Clyde Kluckhohn, "Culture and Behavior," Handbook of Social Psychology, ed. by G. Lindzey, Vol. 2 (Cambridge, Mass.: Addison-Wesley Publishing Co., Inc., 1954).

soil and migratory herders and sea rovers.³³ He contended that agrarians, due to a narrow experience field and occupational specialization, tend to lack organizational acumen. Thus when left to their own advices, they remain helpless in times of catastrophe when organization of energies is required for survival. In contrast to the agrarians, herders and sea rovers confronted with the need to organize for the maintenance of their herds and to fight off wild beasts and marauders, are able to act decisively in times of emergency. Thurnwald, in addition to pointing out the psychological differences, shows in an historical perspective how these personality differences can lead to political and social arrangements of a mobile aristocracy ruling over a sedentary agricultural mass.

Another outstanding example of analysis in which cultural patterns are seen to develop predominant personality matrices can be found in the work of Ruth Benedict. In Patterns of Culture, using, Nietzsche's terminology of Apollonian and Dionysian, she applied them to the Indians of North America. She showed that the diversity of cultures is due to a complex interweaving of a dominant trait throughout each society.

So among the militarist tribes of the American Plains the Dionysian element appears again and again in many different areas of culture: in their vision quests

³³Op. cit., p. 19.

and guardian spirit beliefs, in supermachismo definition of the male role and a corollary acceptance of transvestism among those who could not live up to it, in military qualifications of leadership, suicidal pledges of revenge, in Spartan childhood training.³⁴

Singer and Mead offer reviews of other studies which illustrate attempts to show the influence of cultural patterns on human behavior.³⁵

A consolidation of the positions in psychology and anthropology has been nicely effected by Daniel Rose.³⁶ He rightly points out that

. . . although cognitive structures are carried about in the mind of a person, these cognitive structures which make up culture constitute a shared world. This world is differentiated by individuals, that is, individuals think about what they know and do and thus elaborate certain aspects of their culture. Nevertheless, cognitively structured regions of culture exist before any given individual enters the region and persist after he leaves.³⁷

Areas of the life space can be mapped out with overlapping zones of individual and cultural activity. Rose demonstrates

³⁴Marshall Sahlins, "Culture and Environment: The Study of Cultural Ecology," Horizons on Anthropology, ed. by Sol Tax (Chicago: Aldine Publishing Co., 1964), pp. 139-140.

³⁵Milton Singer, "A Survey of Personality and Culture Theory and Research," Studying Personality Cross-Culturally, ed. by Bert Kaplan (Evanston, Ill.: Row, Peterson, 1961), pp. 9-90; Margaret Mead, "Retrospects and Prospects," Anthropology and Human Behavior, In Anthropology Society Washington (Washington D.C.: The Society, 1962), pp. 115-149.

³⁶Daniel M. Rose, "Culture and Cognition: Some Problems and a Suggestion," Anthropological Quarterly, Vol. 41, No. 1 (January 1968), pp. 9-28.

³⁷Ibid., p. 16.

that the space of cultural activity can be subdivided into spheres. There is the sphere of everyday activity in which most members of the culture have been socialized. The patterns of this sphere would probably have a very pervasive influence in the population due to a common experience. There are other spheres, however, in which only a few members of the culture may be knowledgeable. Either because of the unethical or moral aspects or because of special training required, only a small segment of the population has been socialized here. The influence of the patterns elaborated in these areas may have a minimal effect on the masses or due to the din of a dynamic personality may be institutionalized into the society. The end effect is the same in that the individual reflecting on the culture life space forms his perceptions of the world. Thus individuals " . . . bear conceptually the characteristics of the regions of culture in which they find themselves."³⁸

The interface of cognition and culture has lately become an area of concern to many researchers. Various aspects of cognitive development such as learning, problem-solving, concept attainment, reasoning, attention and psycholinguistics have been and are being investigated. The focus of the studies is generally on changes and constancies as the individual grows and the impact of

³⁸Ibid., p. 26.



social and cultural forces on the developmental process. There is for example in the field of anthropology, new specialists appearing, who call themselves, cognitive anthropologists. Stephen Tyler has recently edited a book entitled Cognitive Anthropology, which is a compilation of various writers on methodology and studies in this area. The approach is called enthnoscience and it " . . . explores qualitative cognitive variation by exploring the native terminology used for a particular objectively definable domain such as plants or disease or kinship."³⁹ It is an attempt to infer the cognitive structures of an individual by the lexicon of the individual's language. Though this approach has its detractors,⁴⁰ there have been studies which have been fruitful in their consequences for education. Utilizing research on language-cognition relationships to provide a conceptual mapping of the world, John Gay and Michael Cole have produced a study on The New Mathematics and an Old Culture: A Study of Learning Among The Kpelle of Liberia. The study reveals how spatial categories found in a local culture can either hinder or enhance the young's ability to comprehend mathematics.

³⁹P. M. Greenfield, and J. S. Bruner, "Culture and Cognitive Growth," International Journal of Psychology, Vol. 1, No. 2 (1966), pp. 89-107.

⁴⁰Robbins Burling, "Cognition and Componential Analysis: God's Truth or Hocus-Pocus," American Anthropologist, Vol. 66, No. 1 (February 1964), pp. 20-28.

Harry Triandis and Henri Tajfel, both provide comprehensive reviews of work that reflect the interaction of culture and cognition.⁴¹

The Concept of Style

This study, however, pursues another tack and borrows a second concept from the field of psychology. This is the idea of "style." In 1937, Gordon Allport introduced the idea of style when he referred to "styles of life" as a means of identifying distinctive personality types.⁴² It has since been used to refer to patterns of behavior that are consistent over long periods of time. These patterns can be intellectual or affective and are found spread over many areas of activity. This terminology has been taken up by some educators and advocated as a determiner of teaching strategies. Frank Reissman argues strongly for the concept of style of learning. He defines it as a " . . . more wholistic (molar) or global dimension of learning operative at the phenomenal level. . . . "⁴³

⁴¹Harry Triandis, "Cultural Influences Upon Cognitive Processes," Advances in Experimental Social Psychology Vol. 1, ed. by Berkowitz (New York: Academic Press, 1964), pp. 2-49; Henri Tajfel, "Social and Cultural Factors in Perception," The Handbook of Social Psychology Vol. 3, ed. by Lindzey and Anderson (Menlo Park, Calif.: Addison-Wesley Publishing Co., 1968), p. 315.

⁴²Gordon W. Allport, Personality, A Psychological Interpretation (New York: Henry Holt and Co., 1937), p. 47.

⁴³Frank Reissman, "The Strategy of Style," Teachers College Record, Vol. 65 (1964), p. 485.

In his book The Culturally Deprived Child he talks of a deprived child's style. Among other things the deprived child's style is characterized by the following traits:⁴⁴

1. physical and visual rather than aural,
2. content-centered rather than form-centered,
3. externally oriented rather than introspective,
4. problem-centered rather than abstract-centered,
5. inductive rather than deductive,
6. spatial rather than temporal, and
7. slow, careful, patient, persevering (in areas of importance), rather than quick, clever, facile and flexible.

Once a description has been made of the deprived child's learning style, strategies can be formulated that more effectively utilize the students strengths and minimize his weaknesses. It is in this tradition that this study attempts to analyze African societies. But the approach used in the present study tends to employ more anthropological data. Hopefully the descriptive summary will closely parallel the results of the Southwestern Cooperative Educational Laboratories work, as reported by Burger.⁴⁵ His work revealed that general trends exist, favoring the

⁴⁴Frank Reissman, The Culturally Deprived Child (New York: Harper and Brothers, 1962), p. 73.

⁴⁵Henry G. Burger, Ethno-pedagogy (Albuquerque, New Mexico: Southwestern Cooperative Educational Laboratory, Inc., June 1968).

performance of one ethnic group over another ethnic groups on a variety of instruments. Spanish-American children were adept at using auditory channels of communication while Indian-Americans were very strong at dealing cognitively via visual media. These attributes were then translated into concrete proposals of what methods and materials would be most effective in education.

Cognitive Style

Various investigators have utilized the concept of style in their research. There is no general agreement about the criteria to use in identifying style. A particularly attractive and worthwhile facet that some investigators have used is the modes of intellectualization that individuals apply to problem solving. This facet is frequently called cognitive style.

Cognitive style has its roots in the area of psychoanalytic ego psychology. Introduction of the concepts that are all subsumed under the term cognitive style was an " . . . attempt to provide structure to the reliable variability that is characteristic of cognitive functioning among humans."⁴⁶ Unfortunately due to a superficial similarity of interests the distinction between the work of those using a cognitive style approach and those who talk

⁴⁶Jerome Kagan and Nathan Kogan, "Individual Variations in Cognitive Processes," Carmichael's Manual of Child Psychology, ed. by Paul H. Mussen (3rd Edition, Vol. 1; New York: John Wiley and Sons, Inc., 1970), p. 1273.

of strategies of intellectualization, have been blurred. Each has different theoretical foundations and encompass functional differences. Cognitive styles are " . . . adaptational control mechanisms of the ego that mediate between the need states and the external environment."⁴⁷ While strategies usually imply operations followed to minimize error during the making of cognitive decisions. A quick short hand distinction between these can be made on the degree of consciousness of the individual. Styles operate without the individuals awareness, while strategies involve a conscious choice of alternatives. The cognitive style used in this study is the Witkin's formulation, based on differentiation of behavior. Lewin in his cognitive-field theory postulated that development of the personality and life spaces involved the process of differentiation. But various theorists following in Lewin's step have perceived that differentiation could be taken to mean two things. There is first the possibility that differentiation means an increasing recognition of a variety of units of experience. Units that in youth originally were thought to be comprised of many items are segregated later into distinct and discrete units. The principle of similarity and dissimilarity is involved in placement of experience or into categories. This approach

⁴⁷Michael Wallach and Nathan Kogan, Modes of Thinking in Young Children (New York: Holt, Rinehart and Winston, Inc., 1965), p. 95.

has been the theoretical ancestor for the work of Kagan, Moss and Siegel in the investigation of cognitive style or categorization behavior which arose from their research in child development.

A second interpretation of differentiation involves a decreasing interdependence of parts. Experiences are seen as linked or separate, depending on the degree of dependence or independence of the various parts of the person as he functions. This position has given rise to the position held by Witkin. Witkin acknowledges that the work of Werner has been a predecessor to his work. It could well be from Werner that Witkin grasps the idea of development as a sequential process, since Werner said: "Wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation and hierarchic integration."⁴⁸ Witkin thinks of the beginning of an individual as an amorphous continuous mass. Eventually an awareness of a difference between an inner and an outer existence within the original body and the field matrix develops. As the individual ages increasing differentiation occurs. There is an awareness of the various parts of the body and their interrelatedness. Finally the

⁴⁸Heinz Werner, "The concept of development from a comparative and organismic point of view," The Concept of Development, ed. by D. B. Harris (Minneapolis: University of Minnesota Press, 1957), pp. 125-148.

awareness of a separateness from the mother and other close humans grows until the organism becomes an individual. A continual drawing of experience which has the field outside the person leads to greater differentiation and increased articulation. Witkin's work developed from an interest in the area of perception. He was particularly interested in peoples' orientation in space as determined by perceptual cues. Very early in his work he found that people differ in rather general ways from each other in their mode of perceiving. By the use of several tests, he discovered two poles on a continuum of behavior which he labeled field dependence and field independence. Field dependent behavior is characterized by the individual's orientating himself through the overall organization of the field or area at which he is looking. No items in the field stand out as distinct but rather all parts are fused to make a whole. In field independence, orientation is achieved by experiencing parts of the field as discrete items which provide direction. This mode of orientation Witkin states possesses an analytical quality. The three tests Witkins used to discover and eventually to measure field dependence--independence are the body-adjustment test, the rod and frame test and the embedded figures test. In the body-adjustment test the ability or lack of the ability to perform the required tasks led to an

evaluation of the person's manner of determining the position of his body in relation to the upright position. The mechanics of the test require a person to sit in a small chair which can be tilted. The chair in turn is located in a room which can be tilted. The task of the individual is to adjust his chair to a position where he perceives himself as upright. It was found that some people perceived their body as straight only when it was aligned with the tilted room. While others were able to achieve a true upright position regardless of the room's angle. For the former it appeared that their perception was dictated by the surrounding world. There seemed to be a fusion between their body and the field in experience. These were the field dependents. The latter group, however, indicated a freedom of body from the field and are the field independents. A distinct sexual difference was noted in the early studies. It appeared that girls tilt their body farther toward the tilted room than do boys. This difference consistently appears in all subsequent measurements. Thus it seems that girls are more field dependent than boys.⁴⁹

The second test, the rod-adjustment test, also involved the issue of perception of the upright position.

⁴⁹Witkins points out studies where this fact has been demonstrated in France, Holland, Israel and Sierra Leone. See H. A. Witkin, "Psychological Differentiation and Forms of Pathology," Journal of Abnormal Psychology, Vol. 70, No. 5 (1965), p. 319.

The person tested was placed in a darkened room. By darkening the room all the normal visual cues would be eliminated. A square frame coated with luminous paint and mounted on an instrument that permitted the frame to be tilted, was present in the room. Within the frame, there is a rod, also coated with luminous paint, which can be tilted at various angles independently of the frame. The subject's task is to position the rod upright from a tilted position while the frame is also tilted. Some subjects perceived the rod as upright only when it was fully aligned with the tilted frame. Upright for them was determined by the frame surrounding the rod. Others were able to position the rod in a true upright position independent of the frame. The second group were able to perceive the rod (a part of the field) as discrete from the frame. A high correlation of scores was achieved on the body adjustment test and the rod-adjustment test. Those who aligned the body with the tilted room also aligned the rod with the frame. Those who perceived their body in a true upright position also correctly positioned the rod in a true upright position.

In the embedded figures test, subjects are asked to deal with an item (a simple geometric figure) in a field (a complex design). Like the other tests this instrument measures the influence of the field on

perception. The amount of time taken to discover the simple figure is an indicator of the field's influence. For some subjects the simple figures almost leaped out. While others needed long periods of time to find the simple figure. Again a high correlation of results on this instrument was found with the body adjustment and the rod adjustment test. Those who easily found the simple figures were also the ones who position their bodies and the rod in an upright position. Details of these studies can be found in Personality Through Perception by H. A. Witkin, H. B. Lewis, M. Hertzman, K. Machover, P. B. Meissner and S. Wapner.

Eventually Witkin began to explore the possibility of a linkage of perceptual styles with other personality and intellectual activities. He states that "It became clear that the way in which each person orients himself in space is an expression of a more general mode of perceiving which is linked to a broad and varied array of personal characteristics involving a great many areas of psychological functioning."⁵⁰ He adapted the designation "analytic-global field approach" to represent this broader dimension. The analytic aspect consists of the tendencies to experience items as discrete, such as field independence.

⁵⁰H. A. Witkin, R. B. Dyle, H. F. Faterson, D. P. Goodenough, and S. A. Karp, Psychological Differentiation: Studies of Development (New York: John Wiley and Sons, Inc., 1962), p. 1.

The global field approach is composed of the tendencies to experience items as fused with the background, as in the case of field dependence. Evidence that the analytic-global field approach is a broad dimension of cognitive style has come from studies of the relation of this style to the nature of the body concept and the nature of the self concept.

Body concept deals with the impression which the person carries around with him of what his body is like and how it is put together. Just as in the perceptual studies, two poles of a continuum were identified, the same condition is found here. There are those, who experience their bodies as having definite limits or boundaries and parts of it as discrete yet interrelated and formed into a definite structure. These are the individuals with an articulated body concept. The global concept envisions the body as fused with the field and varying in nature as the field varies.

The body-adjustment test evaluates articulation of body concept. Another test, devised to measure the degree of articulation of the body concept is the figure-drawing test. The subject is asked to draw a person. Then he is asked to draw a person of the opposite sex. A five point evaluation is made. Articulated drawings, which represent an articulated body concept, show:⁵¹

⁵¹Op. cit., p. 320.

1. realistic body proportions,
2. parts are represented in detail,
3. have a clear representation of sex and sex differences,
4. sex of figure is also indicated by such externals as clothing, and
5. there are also attempts at role representation.

Those who achieve a score indicating an articulated body concept correlate with high scores of field independence in the perceptual tests.

A sense of separate identity is defined as the degree of awareness of needs, feelings, and attributes which an individual can identify as their own or as distinct from those of others. An individual with an articulated sense of identity would experience a great deal of this awareness. He would experience himself as a person separate from others. One with a global sense of identity would have a continuous reliance on external sources for definition of his attributes, judgment, sentiments and even their views of themselves. Instruments used to measure this concept were mainly interviews, observation periods during the time that Thematic Apperception Tests were being administered and conformity to group pressure or suggestibility. Witkin cites a number of studies which tend to substantiate his works.⁵²

⁵²Ibid., p. 321.



To summarize, Witkin's work has revealed that a broad mode or style of behavior is found consistent over several aspects of human behavior. The style of behavior is a continuum involving two ends labeled articulated and global behavior within each individual. Individuals may fall anywhere on this continuum but in the aspects of behavior studied by Witkin, they are fairly consistent in the place. Thus, if they are field independent or articulated in perception, they are articulated also in their body concept and sense of self identity. Further study has indicated that a person's behavior style tends to remain stable over long periods of time. Witkin states that " . . . despite a marked general increase in differentiation in perceptual functioning with age, each individual tends to maintain his relative position among his peers in the distribution of measures of differentiation from age to age."⁵³ Let it be noted that the cognitive style does not equate with general intelligence. There is only a low level of relation of cognitive style to the verbal-comprehension cluster and the attention-concentration cluster of Wechsler's intelligence scales. But there is a very high relation of cognitive style to the Block Design, object assembly and picture completion of Wechsler's intelligence scales. Scores on these tap

⁵³Herman Witkin, Donald Goodenough, and Stephen Karp, "Stability of Cognitive Style from Childhood to Young Adulthood," Journal of Personality and Social Psychology, Vol. 7 (Number 3, 1967), p. 297.

the same kind of analytical ability as do those for field dependence-independence.

Overview to the Rest of the Study

Chapter II will contain the author's review of the literature relevant to the topic of investigation. Included are studies operating with the Witkin cognitive style paradigm in cross-cultural situations, especially in Africa. Studies using other cognitive style models which relate social and cultural variables to cognitive functioning will be reported.

The design of the study coupled with a detailed description of the methods of operation will constitute the presentation of Chapter III.

In Chapter IV the results of the analyses will be reported.

In the final chapter, the author will attempt to summarize the study with the implications of the findings to educational practices in African schools.

CHAPTER II

REVIEW OF THE LITERATURE

This study actually began over a year ago when the author started to review research about education and psychology in Africa. There are four excellent sources that cover the field. They are (1) L. E. Andor's Aptitudes and Abilities of the Black Man in Sub-Saharan Africa, 1784-1963, (2) "African Intelligence: A Critical Survey of Cross-Cultural Intelligence Research in Africa South of the Sahara" by Arthur Cryns in The Journal of Social Psychology, Vol. 57, pp. 283-301, (3) Judith L. Evans' Children in Africa: A Review of Psychological Research, and (4) a bibliography by S. H. Irvine, J. T. Sanders, and E. L. Klingelhofer entitled Human Behavior in Africa.¹

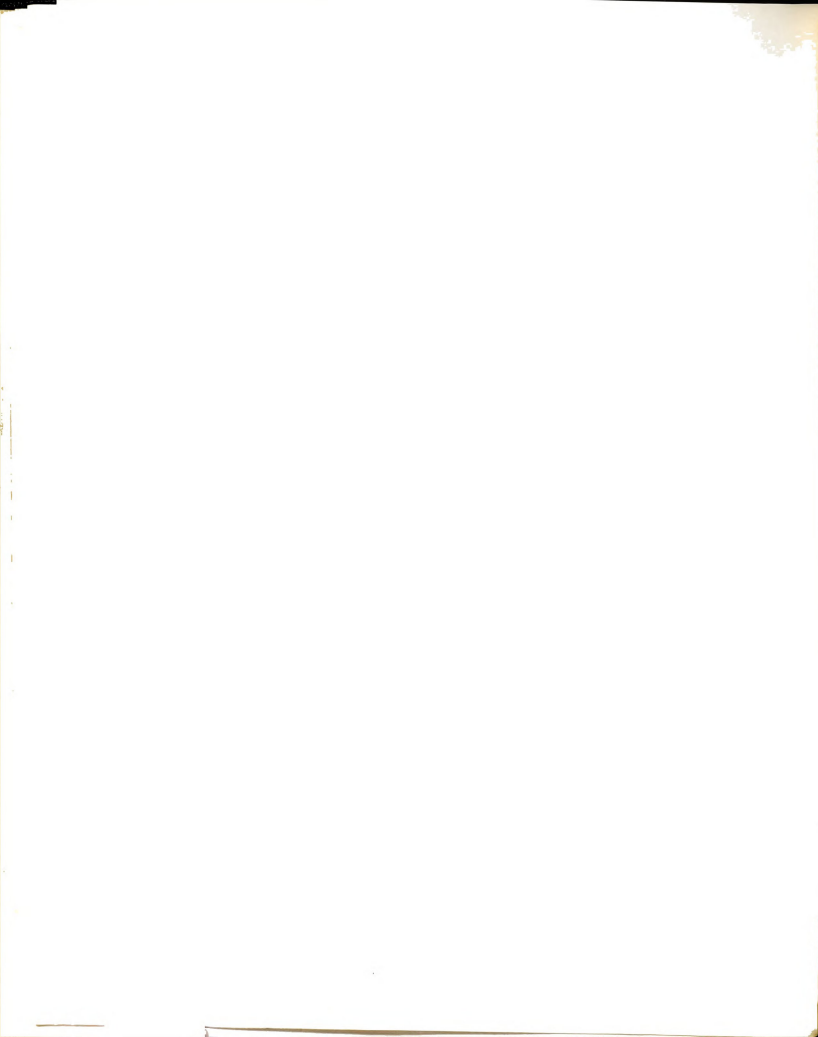
Most of the early writings about Africans unfortunately seem to fall into one of the undesirable paradigms of race relations. The authors approached Africans as different and

¹Most of the early writings about Africans misfortune: L. E. Andor, Aptitudes and Abilities of the Black Man in Sub-Saharan Africa, 1784-1963 (Johannesberg: National Institute of Personnel Research, 1966); Arthur Cryns, "African Intelligence: A Critical Survey of Cross-Cultural Intelligence Research in Africa South of the Sahara," The Journal of Social Psychology, 57:283-301 (1962); Judith L. Evans, Children in Africa: A Review of Psychological Research (New York: Teachers College Press, 1970); S. H. Irvine, J. T. Sanders, and E. L. Klingelhofer, Human Behavior in Africa: A Bibliography of Psychological and Related Writings (London, Ontario: University of Western Ontario, 1970).

outside of the activities followed by Europeans. A dichotomy of "they" and "we" is easily followed in these early works. The first one hundred and fifty years of Andor's collection seems essentially a collection of observations marred by ethnocentrism and subjectivity. It is not until the 1930's that attempts were made to measure abilities by use of standardized instruments, but even these attempts involve cultural biases, and methodology which, even today, continue to cause problems of validity. In the last ten years, more researchers are attempting to observe and evaluate African behavior from an objective view and to see the African as similar in equipment to the European but different in his own field of experience. Evans' book is especially good for pointing out the newer types of study now in progress. Much research on intellectualization and intellectual development is currently being published by African, European and American investigators. There are many good references in addition to Evans' citations.² Many of the new studies refer to an early work by S. F. Nadel,³ which is the antecedent of a tradition of study continued in

²For example one should see the following references: Alastair Heron and Marta Simonsson, "Weight conservation in Zambian children: A Non-Verbal Approach," International Journal of Psychology, Vol. 4, No. 4 (1969), pp. 281-292; Thomas Kellahan, "Abstraction and Categorization in African Children," International Journal of Psychology, Vol. 3, No. 2 (1968), pp. 115-120; Barbara Lloyd, "The Intellectual Development of Yoruba Children, A Re-Examination," Journal of Cross-Cultural Psychology (Fourthcoming issue).

³S. F. Nadel, "Experiments on Culture Psychology," Africa, Vol. X (1937), pp. 421-435.



current research. His study was an attempt at a qualitative comparative analysis of the perception, memory and thinking processes of two Nigerian societies. The research involved the use of pictures and a story which the subjects would describe following set time intervals. The subjects were school students from the Nupe and Yoruba societies. They were matched as closely as possible with regard to age, school standard and the surroundings from which they came. The Nupe were 60 boys, aged 12-18, who had been students for periods from one to five years. The Yoruba numbered only 20 boys. The story experiment consisted of the following story.⁴

Long, long ago there were a man and his wife. They had two children, sons. When the sons had grown up, they saw a beautiful girl. They both made friends with her, and loved her very much. They loved her with one heart. But the girl did not love the elder brother, she only loved the younger. Thereupon the elder brother went to the younger and told him to give up the girl. He said: 'I am the one to marry the girl for I am your elder brother.' Thus he spoke. But the younger refused. They quarrelled a great deal till the elder brother became furious. When the night fell he went to the hut where the younger brother was sleeping and killed him with his sword, he killed him with one stroke. When the people heard the news they said: 'He did an evil deed, God will revenge it.' But the girl cried, she cried for twenty days and her heart was full of pain. When she had finished crying she left and went to another place. Nobody saw her again.

The story was read to the students during the first morning class one day. At noon each was asked individually to

⁴S. F. Nadel, "A Field Experiment in Racial Psychology," British Journal of Psychology, Vol. XXVIII (Oct. 1937), p. 198.

tell the story. A week later, each again was asked to retell the story. The subjects account of the story were analyzed on the basis of five aspects, which are listed below:

1. set phrases and formulae which bear on psychological response and attitudes,
2. rational aspects of the story which were stressed or omitted along with logical linkages,
3. situational aspects such as details of place and time,
4. emotional and moral aspects of the story that appear important to the teller of the tale, and
5. the arrangement and order of the events in the story as recalled by the subject.

The results of the analysis indicated some striking differences in the treatment of the story by the subjects.

The differences were polarized along the lines of the ethnic origin of the subject.

The Yoruba very rarely ignore or neglect the logical structure of the story; on the contrary, over and above the crucial sentences which are embedded in the text and which they faithfully reproduce, they invent new logical links which tend to render the existing connexions more cogent. The Nupe, on the other hand, pay little attention to the factor of logical coherence. Their way of remembering and re-telling is much looser, more devious and unconvincing. They seem interested much more in circumstantial facts, and in filling in details and descriptive features which are, logically of little relevance. Frequently they relate the different events which the story

describes one after the other, without endeavouring to establish, or to preserve an inner cohesion in the narrative.⁵

The second part of the experiment involved pictures and the results were equally marked in differences related to ethnic membership. In this part, six pictures of different topics were exposed for about 15 seconds. Each subject was asked to write down what he had seen, after each picture. A week later they were asked to relate what they could remember viewing each picture. The pictures were of the following:⁶

1. two leopards in the bush,
2. a black horse with a native groom in European dress,
3. a native in Muslim dress sitting on a table,
4. an oasis in the desert, showing a camel and two Arabs in front of a date-palm,
5. a mosque with a huge crowd of people in front, and
6. a bush fire.

The results of this portion of the experiment showed the Yoruba had the characteristic of reading meaning and significance into pictures. Objects in the pictures stood in significant relation to one another. The relationships

⁵S. F. Nadel, "Experiments on Culture Psychology," Africa, Vol. X (1937), p. 428.

⁶Op. cit., p. 204.

were interpreted from general experience to make a coherent meaning. The Nupe, however, described the picture by an enumeration of the objects. Their descriptions were characterized by the arrangement of the visual data in a spatial and symmetrical order. A tendency lacking in the Yoruba. The traits discovered from the experiments were placed along side cultural patterns of each society.

Nadel's conclusions were that the experiment showed that " . . . a people (the Yoruba) possessing a highly developed realistic image-art, drama and a rich, complicated, rationalized religious system . . . , "⁷ appear to be categorized by a stress on rational elements, logical cohesion and a pronounced meaning-oriented approach to observational data. On the other hand, the Nupe, whose culture has no such art or drama and whose belief system includes abstract, impersonal magical principles, have a different psychological reaction to observational data. A Nupe is " . . . more detached and inconsequent in observation and memory, enumerative, more sensitive to spatial and temporal arrangement, and stresses unity of situation and emotional tone rather than facts of meaning and rational consistency."⁸ This close correspondence of culture and psychological response serves as the catalyst for formulation of the present investigation.

⁷Ibid., p. 209.

⁸Ibid., p. 210.

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A study which fostered the idea of cultural patterns and learning as being an important realm of research is the work of Fort, Watts, and Lesser.⁹ In a longitudinal study, (spanning five years) they have found " . . . a child's pattern of intellectual strengths and weaknesses is related to his ethnic-group background."¹⁰ Their subjects were 320 children of the Greater New York City area. The children came from the Chinese, Jewish, Negro and Puerto Rican communities. The results of these studies consisted of three points, as follows:

1. Middle-class children are better able to perform on all tasks than are lower class children.
2. Children from different ethnic groups show different constellations of abilities as well as different levels of performance for various tasks.
3. Middle class children from different ethnic groups in general perform more like each other than do lower-class children from different ethnic groups.

Over a number of tasks (including spatial, verbal, numerical and reasoning), Fort, Watts and Lesser found a breakdown of abilities illustrated by Table 2.1.

⁹ Jane Fort, Jean Watts, and Gerald Lesser, "Cultural Background and Learning in Young Children," Phi Delta Kappan, Vol. L, No. 7 (March 1969), pp. 386-388.

¹⁰ Ibid., p. 386.

TABLE 2.1.--The Relation of each Ethnic group to achievement on intellectual tasks (a scale of one to four is used to Show Relative Ranking of Achievement on Tasks, Four is Highest or Best Achievement).

Ethnic Group	Spatial	Reasoning	Numerical	Verbal
Chinese	4	3	3	1
Jewish	1	2	3	4
Negro	2	2	1	4
Puerto Rico	4	-	-	1

Their explanation of this phenomenon was presumed to lie in part in the experience of the child's early years. They felt that the type of activity to which the child is exposed depends on the child's interaction with his parents and the values which the parents transmit. Thus they identify child-rearing practices as an important ingredient in intellectual development. To a large extent these practices are colored by the cultural milieu of the families. The relation of culture to achievement on tasks, is explained by Fort, Watts and Lesser. For example, they state the reason that Chinese children place high on spatial tests is due to several cultural factors such as language, family structure and traditional games. These three factors use spatial cues and references to convey meaning to everyday activities. All of these culminate into high frequency of spatial experiences that is reflected in high achievement

on spatial tasks. The cultural factors that Fort, Watts and Lesser use to explain task achievement on tests, are some of those which the author of the current study will investigate in relation to cognitive style.

There has in the last ten years been a great deal of interest and study of cognitive style. At least three rival conceptual models (Witkin's: Global-articulated, Gardiner's: Cognitive Controls, and Kagan, Siegel and Moss's: Categorization Style) have been developed and numerous other authors utilize the term with varying degrees of clarity and tightness. Rather than review all of the ramifications, effort will be concentrated on those studies that point out cultural and social forces which influence cognitive style, in particular those using Witkin's paradigm.

One study by Modiano and Maccoby examined cognitive development and functioning of Mexican peasant children, Mexican urban children, and American urban children.¹¹ They concluded that children tend to develop those intellectual skills most functional for their society. The most influential force molding the development of intellectual skills, in their opinion, was the socio-economic base of the society. They stated: "Without the intellectual equipment

¹¹Nancy Modiano and Michael Maccoby, "Cultural and Sociological Factors Relating to Learning Development," Research in Education, ED-020-550, U.S. Department of Health, Education and Welfare, August 31, 1967.



needed to participate viably in the economy and social institutions the individual is crippled in his ability to achieve success and often in his ability to adapt."¹²

They felt their results tended to substantiate the hypothesis of "intelligence of necessity." By an analysis of the peasant society, they found it to be demanding of ability to deal with concrete situations. In order to succeed, there is a need to be perceptive and to distinguish those changes in nature which are economically important. They found that commonly developed as part of the village's "intelligence of necessity" were the following items:¹³

1. attention to details and to the perceptual and functional attributes of items,
2. interest and skill in fine differentiation,
3. development of formal operations among older children, but always with a preference for concrete, perceptual or functional attributes rather than abstract formulations, and
4. rejection of equivalences and isolated-abstract tasks, for doing violence to reality.

In a later article, Maccoby and Modiano correlate the mode of reasoning or cognitive style with the socio-economic

¹²Ibid., p. 7.

¹³Ibid., p. 66.



conditions in greater detail.¹⁴ In this report, they concentrated on the styles of reasoning of children, age 12 and 13. Their major hypothesis was " . . . equivalence reasoning characterizes the children of industrial workers and not peasant children, although both live within the same national culture."¹⁵ They were able to construct a continuum with very characteristic terminal positions. At one extreme were located the group that epitomized the peasant society. Traits of this group constituted a concern with perceptible attributes and the concrete reality of objects. At the other extreme, was a group functioning with an abstract frame of reference and concentrating on nominal concepts. This group was categorized as an "industrial type" characterized by " . . . formal attributes, facility in formulating equivalences and a tendency toward moral reasoning based on reciprocity."¹⁶

Yet another area of influence on cognitive modes of operation was postulated by Robert Hess and Virginia Shipman.¹⁷ They argue that the structure of social system

¹⁴M. Maccoby and Nancy Modiano, "Cognitive Style in Rural and Urban Mexico," Human Development, Vol. 12 (1969), pp. 22-33.

¹⁵Ibid., p. 23.

¹⁶Ibid., p. 23.

¹⁷Robert D. Hess and Virginia C. Shipman, "Early Experience and the Socialization of Cognitive Modes in Children," Child Development, Vol. 36, No. 4 (December 1965), pp. 869-886.

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interacting with the structure of the family communication patterns, shape thought and cognitive style. One of the key examples they discuss is the type of family control. Two types of control are discussed in relation to cognitive functioning. One type of control utilizes the concepts of status appeal or ascribed role norms.

In status (position) oriented families, behavior tends to be regulated in terms of role expectations. There is little opportunity for the unique characteristics of the child to influence the decision-making process or the interaction between parents and child. In these families the internal or personal states of the children are not influential as a basis for decisions.¹⁸

Such control results in a cognitive style where the world is viewed as place governed by a set of regulations and rules that is based on arbitrary decisions. Logical selection of alternative actions are missing or ruled out as important. A restrictive environment of thought is fostered by the status control approach. The other type of control is oriented toward persons.

In a person-oriented appeal system, the unique characteristics of the child modify status demands and are taken into account in interaction. The decisions of this type of family are individualized and less frequently, related to status or role ascriptions. Behavior is justified in terms of feelings, preferences, personal and unique reactions and subjective states.¹⁹

This environment permits flexibility and greater expression of personal choice which leads to a cognitive style of

¹⁸Ibid., p. 871.

¹⁹Ibid., p. 872.

reflection. Thought is given to a comparison of alternatives.

The effect of environment (social organization and family structure) is clearly illustrated in the cognitive style known as categorization style by Rosalie Cohen.²⁰ She related formal structure of family interaction and informal friendship patterns with the relational and analytic dimensions. There has been a great deal of study relating Witkin's model of cognitive style to environmental conditions. The volume, Psychological Differentiation is a summary of studies concerned with parent-child relationships. In a later study co-authored with R. B. Dyk, Witkin clarifies and reinforces his earlier statements about parent-child relationships and the development of articulation.²¹ This study concentrates on subjects immersed in American culture. Reviewed will be studies that explore the phenomenon in societies of Western orientation and in societies of non-Western tradition. Dershowitz demonstrated that cultural patterns in the Jewish sub-culture of the United States influenced the cognitive

²⁰Rosalie Cohen "Conceptual Styles Culture Conflicts, and Non-verbal Tests of Intelligence," American Anthropologist, Vol. 71 (1969), pp. 828-856; Rosalie Cohen, "The Relation Between Socio-Conceptual Styles and Orientation to School Learning," Sociology of Education, Vol. 41 (Spring 1968), pp. 201-220.

²¹R. B. Dyk and H. A. Witkin, "Family experiences related to the development of differentiation in children," Child Development, Vol. 36 (1965), pp. 21-55.

style dimension used by the children.²² From his study it was demonstrated that a consistent pattern of responses was elicited over tasks related to field-dependence in the Jewish community due to the attitudes, values and child-rearing practices of the community. The greater the exposure of the child to traditional Jewish behavioral patterns, the higher the degree of field dependence.

Preale, Amir and Sharon revealed through an investigation of perceptual articulation in several Israeli subcultures that the differential emphasis on subordination to authority and on the acquisition from individual autonomy of the environment encourages different styles.²³ They proposed that children from middle Eastern families would measure as more field dependent than children from families of Western origin. The authors cite several studies that reveal the middle Eastern family as " . . . tradition oriented with an authoritarian, patriarchal structure which tends to foster subordination to authority and restriction of emotional autonomy."²⁴ Also because experts on the

²² Zachery Dershowitz, "Influences of Cultural Patterns on the Thinking of Children in Certain Ethnic Groups: A Study of the Effect of Jewish Sub-Culture on the Field Dependence-Independence Dimension of Cognition," (unpublished Doctoral dissertation, New York University, 1966).

²³ Ilana Preale, Yehuda Amir, and Shlomo Sharon, "Perceptual articulation and task effectiveness in several Israel Subcultures," Journal of Personality and Social Psychology, Vol. 2, No. 2 (1967), p. 118.

²⁴ Ibid., p. 191.

kibbutz agree that it stimulates emotional autonomy and self-reliance, the authors hypothesized that children raised in a kibbutz would be more field independent than non-kibbutz children. The samples consisted of 88 males of middle Eastern ethnic background contrasted with 112 of their peers of Western origin and 145 males born and raised in a kibbutz contrasted with 145 males of Western origin but raised in a non-kibbutz setting. Support for the hypotheses was obtained when the results revealed that " . . . (a) subjects of Western ethnic origin achieved a higher level on four measures of perceptual articulation than did subjects of middle Eastern ethnic origin; (b) subjects on two out of three measures of perceptual articulation, subjects raised in a kibbutz setting achieved higher scores than did subjects of Western background not raised on a kibbutz. . . . "25

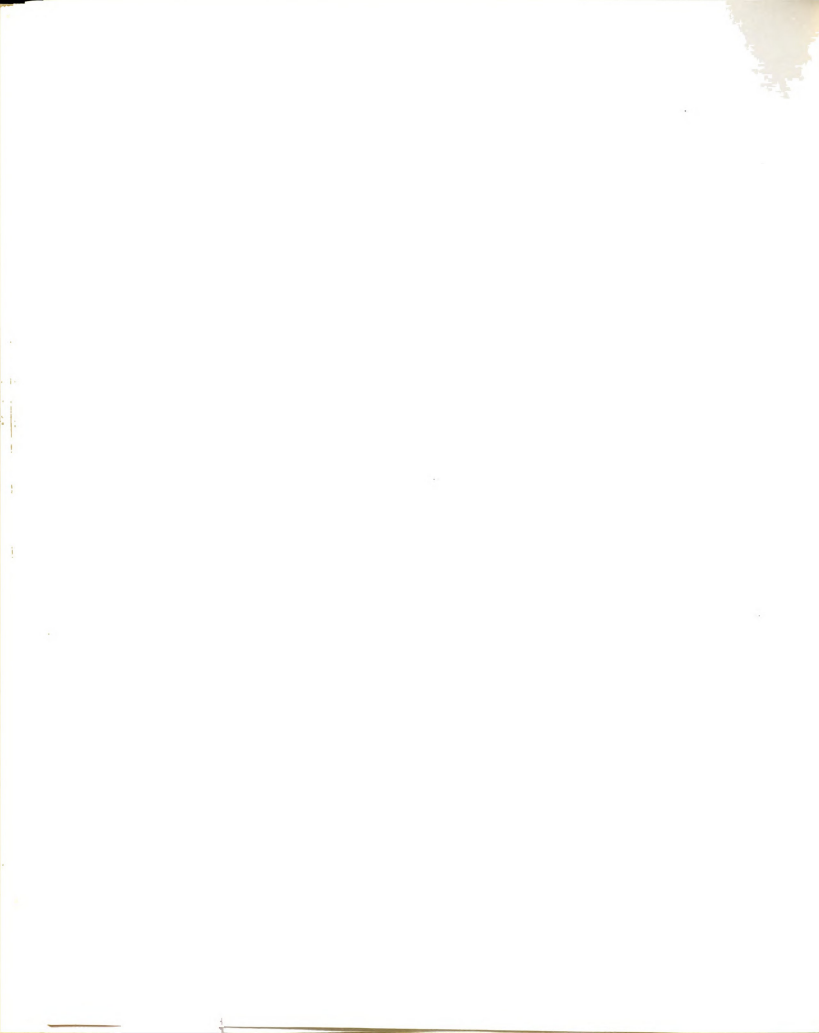
Thus all the studies cited so far in connection with cognitive style have attempted to tie environment with style. This is particularly true in the case of family experiences such as child-rearing practices and attitudes towards autonomy and self-reliance. The next three studies reviewed are particularly important. They are not only studies utilizing Witkin's model of cognitive style, but they involve African subjects. Also they

²⁵Ibid.

strongly illustrate the influence of culture especially family experiences on the development of cognitive functioning. These three studies are J. L. M. Dawson's work in Sierra Leone, John W. Berry's study of Temne and Eskimos and Michael O. Okonji's investigation of Nigeria subjects.²⁶

Dawson was the first to apply Witkin's concepts in an African setting. In 1963, he completed his doctoral dissertation at Oxford on "Psychological effects of social change in a West African Community." The results of this work plus additional information appear in the International Journal of Psychology. His work started as an investigation of the two-dimensional perception phenomenon found in African subjects. Starting with the assumption that the critical factor which accounts for the two dimensional perception of Africans is cultural, Dawson hypothesized that the tribal organization together with child-rearing processes appeared likely to lead to this cognitive development. He stated: "It was considered that certain aspects of Sierra Leone tribal culture and related child-rearing processes were likely to be conducive to the development of a more field-dependent perceptual style which in turn

²⁶J. Dawson, "Cultural and Physiological Influences upon Spatial Perceptual Processes in West Africa," International Journal of Psychology, Vol. 2, No. 2 (1967), pp. 115-128; J. W. Berry, "Temne and Eskimo Perceptual Skills," International Journal of Psychology, Vol. 1, No. 3 (1966), pp. 207-229; Michael Okonji, "The Differential Effects of Rural and Urban Upbringing on the Development of Cognitive Styles," International Journal of Psychology, Vol. 4, No. 4 (1969), pp. 293-305.



might be expected to limit the acquisition of spatial-perceptual skills."²⁷ Two ethnic groups of Sierra Leone with contrasting socialization processes were examined to determine the effects on the development of field-dependence. One society, the Temne have tribal values that reward aggressiveness. The mother is extremely dominating. Considerable emphasis is placed on conformity and group reliance among the Temne. These conditions matched closely those that Witkin claimed fosters field dependence. The Mende, the other society examined, have much less severe socialization processes. The mother is not as dominating and individual autonomy is encouraged. Thus the degree of field-dependence in the second society should be less than among the Temne. The samples were matched in terms of age, occupation, sex, intelligence and education. The results from the Embedded Figures Test and Draw-a-person Test revealed that Temne males are significantly more field dependent than the Mende males. These results support Witkin's hypothesis relating severe socialization patterns and maternal dominance to the development of field-dependence. Additional hypotheses of Dawson concerning kwashiorkor endocrinal disturbances and cultural interactions were confirmed by this study.

²⁷J. L. M. Dawson, "Cultural and Physiological Influences Upon Spatial-Perceptual Processes in West Africa--Part 1," International Journal of Psychology, Vol. 2, No. (1967), p. 118.

Berry's interest in the " . . . relationship between cultural and ecological characteristics of a society and the perceptual skills developed by members of that society . . . , " ²⁸ utilized the work of Dawson and Witkin. Just as there was a contrast in Temne and Mende socialization patterns, Berry demonstrated an even greater gap between the Temne and Eskimos. Children in an Eskimo community are welcomed and treated with kindness and consideration. Considerable emphasis is given to development of self-reliance and freedom of activity. In addition to the socialization patterns, distinct differences in ecological requirements, language, and arts and crafts were enumerated. Scores from a group of Scottish youth were included in the analysis to provide some comparison to a Westernized group. Berry predicted that the Temne would be more field dependent than the Eskimos. The results supported decisively Berry's prediction. Several side results were very surprising. In some tasks the Eskimos demonstrated almost an equal ability to the Scots, even though the Eskimos lacked many of the experiences of education and mass media of the Scots that would encourage less field dependency. Second, Eskimo women were found to be no more field dependent than the men. A result that is contrary to all the evidence of Witkin and others concerning sexual differences.

²⁸ John W. Berry, "Temne and Eskimo Perceptual Skills," International Journal of Psychology, Vol. 1, No. 3 (1966), pp. 207-208.

Berry's investigation on Eskimos was replicated later by R. MacArthur with the same results.²⁹ It would seem that cultural patterns and not physiological differences account for the sexual differences in field dependence measurements.

Okonji after reviewing the works of Dawson and Berry investigated differences in techniques of child-rearing between rural and urban environments in Southern Nigeria. The pattern of child rearing in the rural area was found to be " . . . relatively indulgent and prolonged and usually accompanied by close bodily contact between the child and mother. . . . "³⁰ In conjunction with this the nursing period was found to be fraught with anxiety for mothers due to high infant mortality and the fear of external dangers to the child. Both of these conditions seem to fit categories of behavior which Witkin has pointed out as conducive to the development of field dependence. In contrast, urban elites tend to follow Western methods of child rearing. There is less indulgent behavior displayed toward the infant. Generally the child is separated from the mother earlier in regards to sleeping arrangements and there are less anxiety-producing circumstances, about

²⁹R. MacArthur, "Sex Differences in Field Dependence for the Eskimo: Replication of Berry's Findings," Cross-Cultural Studies, ed. by D. R. Price-Williams (Baltimore, Maryland: Penguin Books, 1969), pp. 196-7.

³⁰Michael Okonji, "The Differential Effects of Rural and Urban Upbringing on the Development of Cognitive Styles," International Journal of Psychology, Vol. 4, No. 4 (1969), p. 295.



the infant's safety, in an urban setting. The results of his work showed that on at least one instrument used for measuring field dependence, children brought up in urban literate homes, are significantly more field independent, than children brought up in a rural illiterate home. These results tend to support still more Witkin's formulations about socialization and family experiences and their effects on cognitive style.

There are several other investigators who have used Witkin's concepts and instruments in Africa. Peter DuPreez in South Africa did a study on "Social Change and Field Dependence in South Africa."³¹ The hypothesis he tested was that subjects, who are more field dependent are more capable of adjusting to social change. He listed three criteria to assess the ability to cope with change. These are level of education, an ability to speak English and/or Afrikaans and experience of travel outside the rural areas. He found that the most significant factor in those who demonstrated the least field dependence, was travel outside the rural area. An interesting question about this is whether it is contact with urban areas per se that makes the difference or is it the contact with people of different values, beliefs and attitudes?

³¹Peter DuPreez, "Social Change and Field Dependence in South Africa," Journal of Social Psychology, Vol. 76, 2nd half (1968), pp. 265-266.

Mallory Wober has used Witkin's instrument in southern Nigeria.³² His results have tended to follow that of other studies. Since visual tests are less appropriate for Africans. Wober suggests that a different approach needs to be followed. He advocates a concept of sensotypes. He feels that rather than evaluate African abilities on visual oriented tasks, which are not emphasized in African societies, evaluation should be on the modalities promoted by the culture. In the case of Africans this would be in the proprioceptivity domain (the linking of auditory, tactile and kinaesthetic inputs to work out appropriate responses). Only more information and more investigation will permit an answer to Wober's formulations.

No attempt has been made to review all of the writings on Witkin's cognitive style that do not have a cross-cultural character. However, two studies that summarize a great deal of this work are Gail Jean Spitler's "An Investigation of Various Cognitive Styles and the Implications for Mathematics Education" and Jerome Kagan and Nathan Kogan's "Individual Variations in Cognitive

³² Mallory Wober, "Towards a Theory Linking Ability, Personality and Culture in Education," The Journal of Special Education, Vol. 1, No. 4 (1966/67), pp. 347-356; Mallory Wober, "Adapting Witkin's Field Independence Theory to Accommodate New Information from Africa," British Journal of Psychology, Vol. 58, Part 1 and 2 (1967), pp. 29-38.

Processes."³³ Spitler's work summarizes the areas where Witkin's instruments have been used to find the relation of field dependence-independence to some other variable. She lists categories of behavior that have been found to be positively related to field independence:³⁴

Boys

picture completion
block design,
object assembly,
subtests of the Wisc

incidental learning
long range recall
mathematical ability

Men

vocabulary comprehension
block design,
object assembly,
arithmetic and digit span,
subjects of WAIS
creativity
mathematical aptitude
adaptive flexibility
shifting sets easily
perceptual speed
induction and deduction

Girls

performance scale of WISC

Women

creativity
mathematical aptitude
associative memory
learning lists of similar words
partial cues tests

³³Gail J. Spitler, "An Investigation of Various Cognitive Styles and the Implications for Mathematics Education" (unpublished doctoral dissertation, Wayne State University, 1970); Jerome Kagan and Nathan Kogan, "Individual Variations in Cognitive Processes," Carmichael's Manual of Child Psychology, ed. by Paul H. Mussen (3rd Edition, Vol. 1; New York: John Wiley and Sons, Inc., 1970), pp. 1273-1365.

³⁴Spitler, op. cit., p. 38.

The Kagan and Kogan work is more of a critical review of Witkin's work and others who have incorporated his concepts and techniques into their studies. In their evaluative summary they express the opinion that " . . . there is no doubt that the Witkin team has uncovered and empirically exploited an exceedingly important dimension of perceptual-cognitive functioning. Its importance derives in large part from its fertility: the dimension is not confined to perception but impinges upon cognition, intelligence, personality, and social behavior."³⁵

Summary

The studies reviewed in this chapter have demonstrated the relation of culture to cognitive style. Some have been reports on replication of Witkin's work. These reports have provided support to factors that Witkin states promote a particular dimension of cognitive style. All have fostered a belief of the author, that the cultural patterns of a society can promote the way in which the members of the society intellectualize. The cultural variables examined by the various researchers in the studies reviewed will form part of the cultural data explored in this research.

³⁵Kagan and Kogan, op. cit., p. 1341.

CHAPTER III

DESIGN AND METHOD FOR OPERATION

In Chapter I, the problem was stated and clarified. The next chapter provided support of the concepts used and illustrated the relationship between some cultural factors to cognitive style. In this chapter the design of the study and the method of operation, used to explore the relationship of cognitive style and cultural factors of selected African societies, is detailed. The source for both the cultural data and the choice of societies is Robert Textor's A Cross-Cultural Summary.¹ This volume, published by the Human Relations Area Files Press in 1967, is an attempt to summarize a large amount of information on cross-cultural phenomena drawn from the existing body of coded cross-cultural materials in the Human Relations Area Files.

Textor compiled data on four hundred societies. The list of four hundred was developed so as to reflect a balanced sample of known cultural types. In the book, Textor makes use of forty-three major categories to organize the cultural data.

The first category is simply an identification of the geographical location of the four hundred societies.

¹Robert Textor, *A Cross-Cultural Summary* (New Haven Connecticut: HRAF Press, 1967).

The last category is concerned with methodological matters. In the latter category the nationality of the principal ethnographers, the dates of the principal ethnographies and the samples used by the various contributors were examined. Since this information has nothing to do with environmental or cultural variables, it was not utilized in the current study.

Each category used by Textor consists of a number of cells or items. Each cell or item generally is a statement of the presence or absence of some cultural variable, very similar to the model of taxonomic identification in the biological sciences. In all, four-hundred sixty-seven items from Textor are included in the current study.

Sample

The sample for this study consists of fourteen African societies drawn from the Textor list. Of the original four-hundred societies, ninety-one societies are located on the African continent in the sub-Saharan region. The basis for selecting the fourteen was the criterion of completeness of information available. Only the fourteen chosen had information available for at least sixty per cent of the cultural variables analyzed.

The fourteen societies and the country where each is located is given in Table 3.1.



TABLE 3.1.--The Fourteen African Societies Selected for Study and the Country in which Each is Located, Along with Other Ethnographic Names of the Societies.

Society	Country	Other Names of Society
Ashanti	Ghana	
Azande	Congo (Kinshasha)	Niam-niam Zande
Chagga	Tanzania	Dschagga, Wachagga
Fon	Dahomey	Dahomean
Ganda	Uganda	Baganda
Lamba	Zambia	Balamba, Walamba
Masai	Kenya/Tanzania	Banano, Nomo, Mberi, Ovimbunda
Mbundu	Angola	
Nuer	Sudan	
Nyakyusa	Tanzania	Solike
Tallensi	Ghana	
Thonga	Mozambique	Bathonga, Shargana-Tonga
Tiv	Nigeria	Munshi
Venda	South Africa	Bavenda, Bawenda

Criteria

Witkin and his co-investigators in several works examined social factors that contribute to the development of either the global or the articulation dimension of cognitive style. In the volume, Psychological Differentiation, Witkin summarizes the influence of family experience, particular the mother-child relationship, on cognitive style development. Dyk and Witkin added support to Witkin's earlier hypotheses in a study of children in an urban setting of the United States.² Research by other investigators in cross-cultural situations have pinpointed various socialization patterns and family experiences as prominent factors in development of cognitive style.³ A descriptive composite of the socio-cultural influences on cognitive style was constructed from the works of Witkin and the others.

²R. B. Dyk and H. A. Witkin, "Family Experiences Related to the Development of Differentiation in Children," Child Development, Vol. 36 (1965), pp. 21-55.

³Illustrative of the research on Witkin's cognitive style in cross-cultural situations are the following three studies: J. Dawson, "Cultural and Physiological Influences Upon Spatial Perceptual Processes in West Africa," International Journal of Psychology, Vol. 2 (1967), pp. 115-128; He demonstrated the effects of indulgent infant care coupled with over protection and prolonged mother-infant contact: J. W. Berry, "Temne and Eskimo Perceptual Skills," International Journal of Psychology, Vol. 1 (1966), pp. 207-229; His work reinforced Dawson's results. At the same time, he postulated and supported the effect of the ecology on cognitive development: Ilana Preale, Shlomo Sharan, and Yehude Amir, "Perceptual Articulation and Task Effectiveness in Several Israel Sub-cultures," Journal of Personality and Social Psychology, Vol. 15, No. 3 (1970), pp. 190-195; Their work demonstrated how the cultural milieu of support of authority and subordination of autonomy leads to field dependence.

Witkin has studied and related three areas of human activity and personality structure to the concept of cognitive style. These areas are perception, body concept and self-identity. The first two are measurable by utilization of a battery of tests devised by Witkin. These were discussed in Chapter I. It is in the third area of self-identity that this study looks for information. Studies have shown that various social influences have an effect on the development of differentiation of self-identity. Witkin identifies what he labels a "socialization cluster." There are three general categories within the socialization cluster. A fourth category called "environmental interaction" is also mentioned by Witkin as influential in the development of self-identity. The four categories are as follows:

1. mother-child interactions,
2. development by socialization of the child's control over expressions of impulse,
3. personal characteristics of the mother, and
4. nature of the ecology--whether it is a variegated environment highly structured or a homogeneous environment which has little inner structure.

The composite developed was used to decide which of Textor's items are manifestation of Witkin's cognitive style.

The composite, also, served to place those items seen as under the purview of cognitive style, on a continuum of global or articulated. Each individual at birth



has little concept of a differentiation of his body from the surrounding field. Eventually he begins to distinguish himself from the environment. The degree of differentiation that occurs develops into a self-identity. The more there is a growing awareness of needs, feelings and attributes which the child identifies as his own and as distinct from others, the greater is the differentiation and the development of structure. The process is a movement from a global (diffuse sense of self) identity to an articulated (distinct and structured sense of self) identity.

Table 3.2 itemizes in greater detail aspects of the socialization cluster category and the category of environmental interaction as they affect differentiation into a global or an articulated aspect.

Test of the Researcher's Discriminations

A reliability study was conducted of the researcher's discrimination of the Textor data. A panel of four judges were asked to make judgments on both parts of the descriptive composite. Support for the researcher's discriminations would be provided if the judges did the following steps:

1. verified the researcher's decision process number one, i.e. that a given item on the Textor list is or is not a manifestation of an aspect of cognitive style as set forth by Witkin et al.,

TABLE 3.2.--The Relationship of the "Socialization Cluster," and the Category of Environmental Interaction to the Global-articulated Dimension.

	Global	Articulated
1. Mother-child interaction and opportunity for child to separate from the mother		
a. Amount and nature of body contact	i. Frequent and prolonged contact (carry baby) ii. Mother only one appropriate to handle child & comfort iii. Very strong ties to child and separation delayed	i. Contact to fulfill bodily needs. ii. Diffusion of "mother" task among or friends. iii. Strong ties but not restrictive to child's separation.
b. Physical care of child	i. Indulgent & frequently inappropriate for the child's age (stroking, handling, holding) ii. Child regarded as in need of special care and protection (no chores)	i. Behavior toward child is not indulgent. ii. Child is not in need of special care or protection.
c. Control of child's activity	i. Limits by having child submissive & dependent on mother ii. Limits curiosity	i. Child is free to undertake activities of his choice. ii. Curiosity encouraged.

TABLE 3.2. --Continued.

	Global	Articulated
2. Development of controls over impulse (importing standards or frames of reference for internalization)		
a. Mother's part	i. Discipline is arbitrary, impulsive and strict ii. Preventing development iii. Does not encourage son to assume a masculine role	i. Discipline is uniform. ii. Encouragement of responsible behavior and self-sufficiency. iii. Does encourage son to assume a masculine role.
3. Personal characteristics of the mother		
a. Mothers feeling of self-realization	i. Inability to cope with everyday problems ii. Small and uniform social interaction outside the home iii. Complains about husband and children	i. Ability to cope with everyday problems. ii. A variety of social interaction outside the home. iii. Lack of complaints about husband and children.
4. Nature of the ecology	i. Geographically stable ii. Homogeneous environment	i. Mobile societies. ii. Variegated environment.

2. verified the researcher's decision process number two, i.e., whether a given item from the Textor list which has been identified as an aspect of the cognitive style of Witkin is a manifestation of either the global or articulated dimension.

The judges were all experienced teachers. Three had experience in another cultural setting, but no particular training in cognitive style or the work of Witkin. In fact since they lacked uniformity of information about Witkin's cognitive style paradigm, they underwent an orientation and test process. The orientation consisted of two steps. First, the judges were exposed to the definition of the concept, cognitive style, and to the crucial factors of discrimination. This exposure consisted of reading articles about psychological differentiation written by Witkin and researchers utilizing Witkin's concepts and a careful study of the descriptive composite. The articles used for the first step are listed below:

1. "Origins of Cognitive Style" written by H. A. Witkin for the book, Cognition: Theory, Research, Promise, C. Scheerer (ed.) N. Y.: Harper and Row, Publishers, 1964, pp. 172-205.
2. "A Cognitive Style Approach to Cross-cultural Research" by H. A. Witkin in the International Journal of Psychology, Vol. 2, No. 4, 1967, pp. 233-250.

3. "Cultural and Physiological Influences Upon Spatial Perceptual Processes in West Africa" by J. Dawson, International Journal of Psychology, Vol. 2, 1967, pp. 115-124.
4. "Temne and Eskimo Perceptual Skills" by J. W. Berry, International Journal of Psychology, Vol. 1, 1966, pp. 207-229.

After step one each judge was given a trial on these discriminations over a sample problem. The problem consisted of a random sample of twenty Textor items. The trial was followed by a period of joint evaluation (the judge and the author) to communicate differences of opinion. The test process involved a criterion test consisting of ten Textor items that the experimenter had judged as not being manifestations of cognitive style and five items judged as manifestations. The items in the criterion test were chosen by means of a random table and included none of the items of the sample problem. Both the sample problem and the criterion test are contained in Appendix F.

Design

This study followed a descriptive model. The data were collected from a variety of sources by the Human Relations Area Files. Textor has catalogued the data into cultural variables. By analyzing the data against a different standard, these same data were used to identify the cultural factors that related to cognitive functioning.

Procedure

In answer to the two general questions that were posed as the purpose of the study in the introductory chapter, three objectives were identified. The first two objectives (A&B) were formulated to derive an answer to the first question: What is the nature of the cognitive style of African societies?

Objective A--To find the African societies for which the Textor tabulates provide data relating directly to cognitive style.

In order to accomplish this objective, several steps of procedure were set forth.

Step A-1.--Identification of those African societies for which the Textor data are virtually complete or at least provide information on sixty per cent or more of the items.

To accomplish this task, charts were constructed for all ninety-one African societies and after each item a mark was made to denote the presence or absence of information. The final fourteen societies selected along with the information available for the Textor items can be found in Appendix C. The enumeration of these societies has been explained in the section entitled Sample, of this chapter.

Step A-2.--Identification of Textor items that relate to cognitive style as postulated by H. A. Witkin and his co-investigators.

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The section on criteria contains a descriptive composite of cognitive style compiled by the author through reading the works of Witkin and others. As the items of Textor were perused, judgments were made by the author as to the relevance of these items to the concept of cognitive style. As each item was examined one or two discriminations were undertaken. First, the content of the item was matched with the general categories of the descriptive composite. If the substance of the item fit the categories of either mother-child interaction, development of impulse control, personal characteristics of the mother or nature of the ecology, it was deemed to be under the purview of Witkin's cognitive style. If an affirmative discrimination of the item for cognitive style was made, then a second discrimination on the direction of dimension was undertaken. For this, a match of the content of the item was made with the global or articulated columns of the descriptive composite in Table 3.2. (Note: if it was not possible to clearly identify which portion of the item is indicative of the articulated direction and which is indicative of the global direction, the item was not labeled a manifestation of cognitive style.) An example that illustrates the procedure is given:

Item 334: Indulgence of the child is

A: high or B: low

The content of this item fit the first category of the descriptive composite which is "mother-child interaction." Therefore, it seemed to be an item appropriate to the concept of cognitive style. Further matching of the content of the item with the descriptive composite revealed that one of the factors under mother-child interaction discusses indulgent care of the infant. The factor "physical care of the child" revealed that high indulgent treatment of the child promotes the global dimension whereas low indulgence enhances articulation. By this criterion part A of item 334 is the descriptor relating to the global direction, while part B is the descriptor relating to the articulated direction. A complete breakdown of the discriminations for each of the fifty-two items can be found in Appendix D.

A reliability check of the researcher's discriminations of Textor's items as to cognitive style and placement of these items on a global-articulated dimension was undertaken. A panel of four judges was enlisted and processed through several steps. The steps followed were described in the section Test of the Researcher's Discriminations.

Objective B--To describe the fourteen African societies selected through Step A-1 in terms of Witkin's cognitive style.

Much as in the pursuit of Objective A, a two step procedure was followed.

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Step B-1.--Produce descriptions for each of the fourteen African societies based on the information obtained in Steps A-1 and A-2 of Objective A.

Appendix C contains charts of the information available in Textor on the fourteen African societies selected for study. The information in these charts was matched with the list of Textor items deemed as manifestations of cognitive style (Appendix D). A synthesis of Appendix C and Appendix D resulted in the development of Appendix E. Appendix E shows the placement of the information available for each society on the fifty-two items discriminated as manifestations of cognitive style. From this information a hierarchical arrangement of the societies based on the amount of articulation for the Textor items was developed. The arrangement was compiled by following a three-step procedure for each society. First the number of items for which information is available were counted. Next it was determined, how many of the items with information were manifestations of the articulated dimension. The final step involved dividing the number of items that demonstrated articulation by the total number of items for which information was available. The result of this calculation, multiplied by one hundred, gave a percentage indicating the amount of articulation of the society.

Step B-2.---Derivation of generalized models for any apparent set of ethnic groups.

It was the researcher's intent to determine if classifications of ethnic groups could be made on the global-articulated dimension. Although the global-articulated dimension is assumed to be a continuum, societies characterized as strongly global or strongly articulated are assumed to be in "polar clusters."

e.g. Polar global cluster--a group of societies that tend to be predominantly global in their orientation.

Polar articulated cluster--a group of societies that tend to be predominantly articulated in their orientation.

The selection of clusters was based on the arrangement of Step B-1. It was decided to take the five societies which manifested the highest amounts of articulation and consider them as a single unit, the "polar articulated cluster." A second unit was formed by grouping the five societies which manifested the lowest amounts of articulation. This set of five was called the "polar global cluster." A third set, composed of the remaining middle cluster of societies was not analyzed. Information for the selected societies on the Textor items can be found in Appendix E. Perusal of the data (Appendix E) permitted quantitative

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generalizations to be made about the clusters. Incidence of a given descriptor in one or more of the societies in a polar cluster indicates the degree to which that descriptor is characteristic of the cluster.

Each item is given a value which indicates its contribution to the difference between the global and articulated clusters. The equation is given below:

$$(A - B)_{\text{Art. cluster}} - (A - B)_{\text{Glo. cluster}} = X$$

A = the data of the A portion of the item

B = the data of the B portion of the item

X = value indicating relative contribution to the difference between clusters (disregarding sign)

From these data, generalizations can be made about the relative importance of any cultural variable to the global or articulated dimension of a society.

The second question asked in the purpose section of Chapter I, queried about what cultural variables, other than those identified in question one, can be associated with the cognitive styles of the African societies. This question was answered by Objective C. It was, in fact, an attempt to reinforce a point that Witkin thought certain when he wrote: " . . . in geographically stable societies, social arrangements and child-rearing practices evolve in close relation to ecology, and at any point in time these

factors are in continuous interaction, so that the question of their independent contributions is probably academic."⁴

Objective C--To select societies (of the fourteen societies) for which all other Textor items can be correlated with cognitive style generalizations or the generalized models of Step B-2.

All of the Textor items which had not been identified as manifestations of cognitive style were analyzed with reference to their degree of occurrence as descriptors for each of the two polar clusters. As in Step B-2 a quantitative distribution for each descriptor in the global cluster and the articulated cluster was obtained. A comparison of the clusters for each descriptor revealed whether that descriptor made any contribution to the dimensionality and also to the difference between the clusters. By simple inspection the relative differences between the clusters on each descriptor were ascertained. Also, by using the statistical procedure of Step B-2, a value representative of the differences between the clusters was obtained. These calculations provided a basis for statements about each cultural variable in relationship to the global and to the articulated societal cognitive style.

⁴H. A. Witkin, "Cognitive-Style Approach to Cross-Cultural Research," International Journal of Psychology, Vol. 2, No. 4 (1967), p. 236.

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Summary

By use of a descriptive composite of Witkin's work the two questions on cognitive style and African societies were explored. The procedure consisted of attainment of three objectives. Data to answer the questions were thus obtained. In outline form, the procedure followed the pattern stated below:

Question #1

What is the nature of the cognitive style of African societies?

Objective A--Find the societies for which Textor data relating to cognitive style are available.

Objective B--Describe the societies in terms of cognitive style.

Question #2

What cultural variables, other than those identified in question one, seem to be found concomitant with the cognitive styles described for the African societies?

Objective C--Select the societies of the fourteen societies for which all other Textor items can be correlated with the generalizations about cognitive style.

CHAPTER IV

ANALYSIS OF THE RESULTS

In this chapter are presented the findings from the data. Answers for the two questions that fulfill the purpose are given. The order of presentation follows the procedure discussed in Chapter III. Thus the question "What is the nature of the cognitive styles of African societies?" is presented first. The results of Objective A (find the societies for which Textor data relating to cognitive style are available) and Objective B (describe the societies in terms of cognitive style) are given as the responses. A response is then given to the question "What cultural variables other than those identified in question one seem to be found concomitant with the cognitive styles described for the African societies?" The results of Objective C (select the societies among the fourteen societies for which all other Textor items can be correlated with the cognitive style generalizations) answer this question.



Objective A--To find the African societies for which the Textor tabulates provide data relating directly to cognitive style.

Step A-1

Identification of those African societies for which the Textor data are provided on 60 per cent or more of the items.

The societies selected for the study were determined by the amount of information available on the four hundred sixty-seven Textor items used in the study. (Textor's items dealing with geography and methodology of the research were not considered in determining criteria for selection; nor were these data analyzed.)

By using the availability of data for more than 60 per cent of the items as a criterion for including a society in the study, the societies selected are shown in Table 4.1.

Step A-2

Identification of Textor items that relate to cognitive style as postulated by H. A. Witkin.

Of the four hundred sixty-seven Textor items investigated, only fifty-two were deemed to be manifestations of cognitive style as derived from Witkin according to the composite described in Chapter III. Appendix D is a list which identifies the items designated as manifestations of cognitive style and the portions of each item relating to the



TABLE 4.1.--Societies Selected for Study with the Amount of Information Available for Each.

Society	Number of Bits of Information Available (Total possible 467)
Ashanti	354
Azande	380
Chagga	326
Fon	331
Ganda	281
Lamba	282
Masai	306
Mkundu	276
Nuer	281
Nyakyura	271
Tallensi	321
Thonga	372
Tiv	327
Venda	305



direction of the dimension (global or articulated). These data are shown later in the chapter (Table 4.5) arranged in order of the clusters found to be significantly descriptive of sets of societies. It was at this point that the panel of judges was employed to test the reliability of the researcher's discriminations. The results from the Test of the Researcher's Discriminations are shown in Table 4.2.

These results indicated that the researcher's judgments and those of the judges in this reliability test were highly correlated. Thus the replication of the procedure would be likely to produce similar data.

TABLE 4.2.--Judges' Decisions (Expressed as Percentage of Agreement with the Principal Investigator) Regarding Textor Items as Manifestations of Cognitive Style and as Representations of Given Directions of each Descriptor.

Judge	Mutual identification of items as relating to cognitive style	Agreement on the representations of given direction of each descriptor
#1 Male	100%	80%
#2 Male	87%	100%
#3 Female	66.7%	75%
#4 Male	87%	100%
Averages	85.2%	88.9%



Objective B--To describe the fourteen African societies selected through Step A-1 in terms of Witkin's cognitive style.

Step B-1

Production of descriptions for each of the fourteen African societies, based on the information obtained in Steps A-1 and A-2 of Objective A.

The data (Appendix E) were examined, by using the three-step procedure given in Step B-1 of Chapter III. Results from this procedure are summarized in Table 4.3.

Only the items that permitted identification of the descriptor's relationship to the global-articulated dimension were considered manifestations of cognitive style. Thus the data given in the column on items for which information is available, Table 4.3, represents both the items of an articulated direction and the items of a global direction. From the table, it can be seen no society manifests a complete global or articulated direction.

Step B-2

Derivation of generalized models for any apparent set of ethnic groups.

For purposes of analysis and in order to provide contrasting sets, three clusters were suggested within the ranking of Step B-1. It was assumed that societies



TABLE 4.3.--Ranking of Selected African Societies, Showing the Amount of Articulation as Determined From the Textor Data.

Society	Items (of a possible fifty-two) for which information is available	Number of items that manifest the articulated dimension	Percentage of articulation
Masai	29	22	76
Ganda	28	20	75
Fon	34	23	71
Ashanti	39	27	69
Venda	31	20	62
Lamba	25	15	56
Nyakyusa	24	13	52
Thonga	41	22	51
Mbundu	33	16	45
Chagga	42	19	43
Azande	38	17	42
Nuer	33	12	37
Tiv	27	9	35
Tallensi	37	13	31

characterized as strongly global or strongly articulated could be grouped as polar clusters. Arbitrarily deciding to take sets of five from each end of the global-articulated continuum resulted in the following derived clusters:

1. the polar articulated cluster--consists of the Masai, Ganda, Fon, Ashanti and Venda societies,
2. the polar global cluster--includes the Chagga, Azande, Nuer, Tiv and Tallensi societies, and
3. a middle cluster--consists of the Lamba, Nyakyusa, Thonga and Mkundu societies.

In the operations that followed, only the polar groups were analyzed and contrasted. A check was undertaken to determine whether or not the hierarchical arrangement from Step B-1 was the result of a spurious artifact: since information was lacking for some of the fifty-two items several rank orders were developed in order to find out if the ranking was strongly influenced by the lack of information.

Correlation between these rank orders was obtained by the use of the Spearman rank-difference correlation formula. Table 4.4 shows the results of the check.

These results indicated that the rank order developed in Step B-1 is an accurate reflection of the relative position of each society, on the global-articulated continuum.

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1842-1843
1844-1845
1846-1847

TABLE 4.4.--Rank Orders from Most Articulated to Least Articulated over Different Item Totals with the Spearman Scores Between Different Orders.

I. Rank orders covering only societies in the two polar groups.		
Rank ₁ Society	Rank ₂ Society	Rank ₃ Society
A. Order using all fifty-two items	B. Order using only items that have information for all ten societies or at least have information for four societies out of each cluster of five (22 items)	C. Order using items that have information for all ten societies or at least have information for four societies out of each cluster of five (22 items)
1 Masai	2.5 Masai	1 Ganda
2 Ganda	2.5 Ganda	2.5 Masai
3 Fon	2.5 Fon	2.5 Fon
4 Ashanti	2.5 Vende	4 Ashanti
5 Vende	5 Ashanti	5 Vende
6 Chagga	6.5 Chagga	6 Azande
7 Azande	6.5 Azande	7 Chagga
8 Nuer	8 Nuer	8.5 Nuer
9 Tiv	9.5 Tiv	8.5 Tallensi
10 Tallensi	9.5 Tallensi	10 Tiv
		Rho for Rank ₁ and Rank ₂ is 0.93
		Rho for Rank ₁ and Rank ₂ is 0.95



TABLE 4.4.--Continued.

Rank ₁ Society	Rank ₂ Society	Rank ₃ Society	Rank ₄ Society
1 Masai	2.5 Masai	1.5 Masai	1 Ganda
2 Ganda	2.5 Ganda	1.5 Ganda	3.5 Masai
3 Fon	2.5 Fon	5 Fon	3.5 Fon
4 Ashanti	2.5 Vende	5 Ashanti	3.5 Ashanti
5 Venda	6 Ashanti	5 Venda	3.5 Thonga
6 Lamba	6 Nyakyura	5 Nyakyura	6 Venda
7 Nyakyura	6 Thonga	5 Thonga	7.5 Nyakyusa
8 Thonga	8 Lamba	9.5 Lamba	7.5 Chagga
9 Mbundu	9.5 Chagga	9.5 Chagga	10.0 Lamba
10 Chagga	9.5 Azande	9.5 Azande	10.0 Mbundu
11 Azande	12 Mbundu	9.5 Nuer	10 Azande
12 Nuer	12 Nuer	12.5 Mbundu	12.5 Nuer
13 Tiv	12 Tiv	12.5 Tiv	12.5 Tallensi
14 Tallensi	14 Tallensi	14 Tallensi	14 Tiv

Rho for Rank₁ and Rank₂ is 0.93
Rho for Rank₁ and Rank₃ is 0.88
Rho for Rank₁ and Rank₄ is 0.87

Study of the data (Appendix E) revealed which cultural variables were significantly related to the Witkin model of cognitive style. Incidence of a given descriptor in one or more of the societies in a polar cluster indicated the degree to which that descriptor was characteristic of the cluster. Use of the equation given in Step B-2 of Chapter III gave a value for each item, indicating the relative contribution to the difference between clusters. The results are presented in Table 4.5. The table is divided into two parts. Part one contains cultural variables for which there is a high order of confidence; for this part a full evaluation was possible, due to the availability of information for all the societies. Part two contains those cultural variables for which information was incomplete; thus this part of the table is taken with somewhat lower confidence. Examination of the data (Table 4.5) for the degree to which a descriptor was characteristic of a polar cluster and the relative importance of any cultural variable to the differences between the clusters, revealed several generalizations. Beginning with part 1 of Table 4.5, the following observations were made:

1. Community organization variables which deal with the homogeneity of the population were found to be important both as contributors to the difference between the clusters



TABLE 4.5.--Cultural Variables Significantly Related to the Witkin Model of Cognitive Style.^a

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
I. High order of confidence.	
<u>XVII Community Organization</u>	
8	#175 Community A: is kin-homogeneous (i.e. clan-community or a deme) or B: is kin-heterogenous. Art cluster: 0-5-0-0 ^b Global cluster: 4-1-0-0
8	#177 Community A: is a single clan-community and exogenous or B: remaining substantively coded cultures Art cluster: 0-5-0-0 Global cluster: 4-1-0-0
<u>XXXIV Infant and Childhood</u>	
6	#344 Total positive pressure toward developing self-reliant behavior in child, A: is high or B: is low Art cluster: 4-1-0-0 Global cluster: 1-4-0-0
6	#345 Child's inferred anxiety over non-performance of self-reliant behavior A: is high or B: is low Art cluster: 4-1-0-0 Global cluster: 1-4-0-0
6	#348 Total positive pressure toward developing achievement behavior in the child A: is high or B: is low Art cluster: 5-0-0-0 Global cluster: 2-3-0-0
6	#349 Child's inferred anxiety over non-performance of achievement behavior A: is high or B: is low ^c Art cluster: 5-0-0-0 Global cluster: 2-3-0-0

TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
I. High order of confidence.	
<u>XXXIV Infant and Childhood</u>	
4	#334 Indulgence of the child, A: is high B: is low Art cluster: 0-5-0-0 Global cluster: 2-3-0-0
<u>VI Subsistence</u>	
2	# 62 A. Husbandry of some kind is present or B: husbandry is absent Art cluster: 5-0-0-0 Global cluster: 4-1-0-0
<u>XII Stratification</u>	
2	#102 Class stratification A: is present or B: absent Art cluster: 4-1-0-0 Global cluster: 3-2-0-0
<u>XXXIV Infant and Childhood</u>	
2	#336 Total positive pressure toward developing responsible behavior in the child A: is high or B: is low Art cluster: 5-0-0-0 Global cluster: 4-1-0-0
2	#337 Child's inferred anxiety over non- performance of responsible behavior A: is high or B: is low Art cluster: 5-0-0-0 Global cluster: 4-1-0-0
<u>XXXIX Aggression and Warfare</u>	
2	#419 Military glory is A: strongly or moderately emphasized or B: negligibly emphasized Art cluster: 5-0-0-0 Global cluster: 4-1-0-0

TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
I. High order of confidence.	
<u>IV Settlement</u>	
0	# 44 Settlements are A: fixed or B: non-fixed Art cluster: 4-1-0-0 Global cluster: 4-1-0-0
<u>VI Subsistence</u>	
0	# 61 A: Subsistence primarily by animal husbandry or B: remaining cultures Art cluster: 1-4-0-0 Global cluster: 1-4-0-0
II. Lower order of confidence.	
<u>X Political Organization</u>	
7	# 84 Level of political organization is A: the large state or B: lower Art cluster: 3-0-1-1 Global cluster: 0-4-1-0
<u>XXXIV Infant and Childhood</u>	
6	#317 Display of affection toward the infant--fondling, caressing, playing with him, A: is high or B: is low Art cluster: 0-4-0-1 Global cluster: 3-1-0-1
<u>IX Demography</u>	
5	# 80 A: City or town present or B: no city or town Art cluster: 3-2-0-0 Global cluster: 0-4-0-1

TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
II. Lower order of confidence.	
<u>XXXIII Pregnancy and Childhood</u>	
5	#294 A: Practices to protect the newborn child from harmful influences are present or B: such practices are absent or inferred absent Art cluster: 1-3-0-1 Global cluster: 3-0-0-2
<u>XXXIV Infant and Childhood</u>	
5	#327 Age of the infant at time of reduced contact with the mother A: is higher than 2 years or B: is 2 years or lower Art cluster: 0-4-0-1 Global cluster: 2-1-0-2
<u>XIV Occupational Specialization</u>	
3	#117 Percentage of occupations that are specialized A: is high or B: is medium or low Art cluster: 1-0-0-4 Global cluster: 1-3-0-1
<u>XXXIV Infant and Childhood</u>	
3	#318 Over-all indulgence of the infant A: is high or B: is low Art cluster: 0-5-0-0 Global cluster: 1-3-0-1
3	#319 Protection of the infant from environmental discomforts A: is high or B: is low Art cluster: 1-4-0-0 Global cluster: 2-2-0-1

TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
II. Lower order of confidence.	
3	#321 Immediacy (e.g. speed) of reduction of the infant's drives A: is high or B: is low Art cluster: 0-3-0-2 Global cluster: 2-2-0-1
3	#322 Consistency or reduction of the infant's drives A: is high or B: is low Art cluster: 0-3-0-2 Global cluster: 2-2-0-1
3	#323 Constancy of presence of the infant's nurturant agent A: is high or B: is low Art cluster: 2-3-0-0 Global cluster: 1-3-0-1
<u>XXXXI Culture Contact and Culture Change</u>	
3	#468 Contact with other cultures A: is frequent or B: is regular or irregular Art cluster: 0-0-0-5 Global cluster: 1-4-0-0
3	#470 Innovations are A: generally accepted or B: accepted only selectively Art cluster: 0-0-0-5 Global cluster: 1-4-0-0
<u>XI Societal Complexity</u>	
2	# 91 Societal complexity A: is high or B: is low Art cluster: 2-0-0-3 Global cluster: 1-1-0-3
<u>XIV Occupational Specialization</u>	
2	#119 Craft specialization score A: is high or B: is medium or low Art cluster: 1-0-0-4 Global cluster: 4-1-0-0

TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
II. Lower order of confidence.	
<u>XXXIV Infant and Childhood</u>	
2	#315 Mother and nursing child customarily sleep A: in the same bed or B: in different beds Art cluster: 1-1-0-3 Global cluster: 2-0-0-3
2	#329 Age at toilet training A: is 2 years or higher or B: is lower than 2 years Art cluster: 1-0-0-4 Global cluster: 0-1-0-4
<u>VIII Writing</u>	
2	# 78 Writing system is A: either alphabetic or phonetic or mnemonic or B: absent Art cluster: 0-0-0-5 Global cluster: 3-2-0-0
<u>IX Demography</u>	
2	# 79 A: where a city is present or B: no city Art cluster: 0-5-0-0 Global cluster: 0-4-0-1
<u>XXXI Status of Women</u>	
2	#277 A: inferior or subjected or B: not strongly inferior or subjected Art cluster: 0-1-0-4 Global cluster: 0-0-0-5
<u>XXXIV Infant and Childhood</u>	
2	#302 Average early satisfaction potential A: is high or B: is low Art cluster: 1-2-0-2 Global cluster: 1-1-0-3

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TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
II. Lower order of confidence.	
2	#308 Average socialization anxiety A: is high or B: is low Art cluster: 2-1-0-2 Global cluster: 2-0-0-3
2	#320 Degree of drive reduction considering particularly hunger, thirst and unidentified discomforts--A: is high or B: is low Art cluster: 3-2-0-0 Global cluster: 2-2-0-1
2	#325 Degree of diffusion among the infant's nurturant agents A: is high or B: is low Art cluster: 3-2-0-0 Global cluster: 2-2-0-1
2	#331 Age at the beginning of independence training A: is 3.8 years or higher or B: is lower than 3.8 years Art cluster: 1-0-0-4 Global cluster: 2-0-0-3
2	#340 Total positive pressure toward developing nurturant behavior in the child A: is high or B: is low Art cluster: 1-1-0-3 Global cluster: 2-1-0-2
2	#341 Child's inferred anxiety over non-performance of nurturant behavior in the child A: is high or B: is low Art cluster: 2-0-0-3 Global cluster: 2-1-0-2
<u>XXXXII Miscellaneous</u>	
2	#479 Need to achieve, as inferred from folk tales A: is high or B: is low Art cluster: 2-1-0-2 Global cluster: 1-1-0-3

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TABLE 4.5.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
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II. Lower order of confidence.

XI Societal Complexity

0 # 92 Index of social development A: is high or B: is low
 Art cluster: 1-0-0-4
 Global cluster: 1-0-0-4

XXXIV Infant and Childhood

0 #316 Exclusive mother-son sleeping arrangements last A: 1 year or longer or B: less than 1 year
 Art cluster: 3-0-0-2
 Global cluster: 4-1-0-0

^aSome items were omitted from the analysis. Items 150, 151, 153, and 154 were deleted, due to a complete lack of information. Items 51 and 93 were omitted because they contained data for the same descriptor in all ten societies.

^bKey to data after Art Cluster and Global Cluster:
 1st number = data in item portion A, 2nd number = data in item portion B, 3rd number = data where item is irrelevant, 4th number = data missing for item.

^c#349 is interesting in that it really is a reversal. By this is meant that the contribution derives from a heavy placement of the articulated portion of the item in the global cluster, while the articulated cluster societies were largely the global portion of the item.

and as descriptors characteristic of the clusters. Articulation was evidenced by those communities characterized by a lack of localized clan structures and a proclivity toward marriage outside the blood group. The global direction, on the other hand, was prominently associated with communities consisting of people who believe themselves related by a common ancestor and who favor marriage within the blood line.

2. Some variables under the Textor category Infancy and Childhood were found to be highly associated with the global-articulated dimension. Variables that concern the development of certain behavior and the anxieties that occur because of a nonperformance of these behaviors were found concomitant with both poles of the dimension. In societies where the total positive pressure toward developing self-reliant and achievement behavior and where the inferred anxiety of the child over the nonperformance of these behaviors were high the cognitive style manifested was in the articulated direction. A slightly lower relationship to the global-articulated dimension was found to be associated with the amount of indulgence given the child. Societies demonstrating a global direction were associated with both high and low indulgence. But societies evidencing the articulated direction were associated only with the descriptor of low indulgence.

3. The remaining cultural variables in part 1 of Table 4.5 were found to lack a high relationship with the

directions of the global-articulated dimension. Both the value indicating the relative contribution to the difference between the clusters and the incidence of given descriptors in one or more societies in a polar cluster were low.

Observations about the data in the second part of Table 4.5 revealed these additional statements:

1. One variable of the political organization category was found to be significantly related to the global-articulated dimension. The descriptor for the absence of a large state was found to be significant to the degree in which it was characteristic of the global cluster.

2. Additional variables of the Infancy and childhood category were shown to be attendant with the global-articulated direction, characteristic of the polar clusters. These were display of affection toward the infant, age of the infant at the time of reduced contact with the mother, the amount of overall indulgence of the infant and the number of behaviors leading to the protection of the infant, from environmental discomforts. The descriptors, low display of affection, contact reduced at two years or sooner, low overall indulgence and low frequency of protection behaviors, were all associated with the articulated direction. Of these descriptor dealt with a high display of affection shown descriptors, only one was clearly shown to be related to the global direction. This descriptor dealt with a high display of affection shown toward the child.



3. The descriptor, absence of a city or town, was found to be associated with the global cluster.

4. Additional support for the relationship of variables involving protection of the young came from the category of Pregnancy and Childhood. Societies of the polar global cluster evidenced practices to protect the newborn child from harmful influences, while in societies of the polar articulated cluster these practices were absent.

5. A number of additional descriptors were shown to be associated with the global direction. These were low percentage of occupations that are specialized, regular or irregular contact with other cultures and only selective acceptance of innovations. It was impossible to relate these descriptors or their opposites to the articulated direction, since the information for the societies of the polar articulated cluster was missing.

The remaining cultural variables in part 2 of Table 4.5 were difficult to evaluate, due to a lack of data.

Objective C--To select societies (of the fourteen societies) for which all other Textor items can be correlated with cognitive style generalizations or the generalized models of Step B-2.

All of the Textor items which had not been identified as manifestations of cognitive style were analyzed. Their degree of occurrence as descriptors for each of the two polar groups and their values with reference to the differences

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between the groups were obtained. The statistical procedure given in Step B-2 was utilized. The variables most significantly correlated with cognitive style are given in Table 4.6.

Generalizations about the significance of other Textor items to the global-articulated dimension were obtained. These observations included:

1. Two items of the natural environment category were shown to be highly associated with the global-articulated dimension. Four of the five societies of the global cluster were found concurrent with a tropical grassland, while none was associated with a tropical or subtropical rain forest. However none of the societies of the articulated cluster was found to be concurrent with a tropical grassland and three societies were shown to be associated with a tropical or subtropical rain forest.

2. The one variable of the settlement category which was found to be associated with cognitive style dealt with the compactness of fixed settlements. All five societies of the global cluster were shown to be concurrent to fixed, noncompact settlements, while three of the societies of the articulated cluster were found to be associated with fixed, compact settlements.

3. In the diet category the variable dealing with the quantity of food available was found to be significant for the identification of the clusters and as a criterion

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TABLE 4.6.--Cultural Variables from the Additional Textor
Items which are Significantly Associated with
the Witkin Model of Cognitive Style.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
<u>III Natural Environment</u>	
8	# 41 Natural environment is A: tropical grassland or B: not Art cluster: 0-5-0-0 Global cluster: 4-1-0-0
6	# 42 Natural environment is A: tropical or subtropical rain forest or monsoon forest or B: not Art cluster: 3-2-0-0 Global cluster: 0-5-0-0
6	# 43 Natural environment is A: tropical rain forest or B: not Art cluster: 3-2-0-0 Global cluster: 0-5-0-0
<u>IV Settlements</u>	
6	# 45 If fixed are A: compact or B: non- compact Art cluster: 3-2-0-0 Global cluster: 0-5-0-0
<u>V Diet</u>	
7	# 49 Food is A: plentiful or B: less than plentiful Art cluster: 4-1-0-0 Global cluster: 0-4-0-1
<u>VIII Writing System</u>	
5	# 77 Writing system A: is alphabetic or phonetic or B: is mnemonic or absent Art cluster: 0-0-0-5 Global cluster: 0-5-0-0

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TABLE 4.6.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
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X Political Organization

- 5 # 85 Level of political integration is
 A: large state or little state or
 B: lower
 Art cluster: 3-0-1-1
 Global cluster: 1-3-1-0

XI Societal Complexity

- 8 # 95 A: hierarchy of national jurisdic-
 tion has 4, 3, 2 levels or B: 1 or
 no levels
 Art cluster: 5-0-0-0
 Global cluster: 1-4-0-0

XIV Occupational Specialization

- 5 #115 Occupational specialization A: is
 full time and for surplus production
 or B: is full time but not for
 surplus production or part time only
 Art cluster: 0-0-0-5
 Global cluster: 0-5-0-0

XVI Justice and Law

- 5 #142 Level of social sanction A: is the
 public corporeal sanction or B: is
 private settlement
 Art cluster: 0-0-0-5
 Global cluster: 0-5-0-0
- 5 #143 Ratio of restitutive to repressive
 sanctions A: is high or B: is
 medium or low
 Art cluster: 0-2-0-3
 Global cluster: 4-1-0-0
- 5 #144 Ratio of restitutive to repressive
 sanctions A: is high or medium or
 B: is low
 Art cluster: 0-2-0-3
 Global cluster: 4-1-0-0



TABLE 4.6.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
<u>XVIII Community Organization</u>	
6	#180 Community A: is commonly exogamous or B: is commonly nonexogamous Art cluster: 1-4-0-0 Global cluster: 4-1-0-0
<u>XX Lineality of Kin Group</u>	
5	#191 Kin group A: is the patrilineal or double descent or B: is the quasi-lineage Art cluster: 5-0-0-0 Global cluster: 2-2-1-0
<u>XXIII Cousin Marriage</u>	
6	#213 Cousin marriage is A: permitted or B: not permitted Art cluster: 3-2-0-0 Global cluster: 0-5-0-0
<u>XXIX Mode of Marriage</u>	
5	#260 Age of male at marriage A: is less than 20 or B: is 20 or over Art cluster: 2-1-0-2 Global cluster: 0-4-0-1
<u>XXXIII Pregnancy and Childbirth</u>	
5	#299 Postpartum sex taboo is A: longer than one year or B: lasts one year or less Art cluster: 1-3-0-1 Global cluster: 4-1-0-0
<u>XXXIV Infancy and Childhood</u>	
5	#326 Inferred transition anxiety between infancy and childhood A: is high or B: is low Art cluster: 4-1-0-0 Global cluster: 1-3-0-1

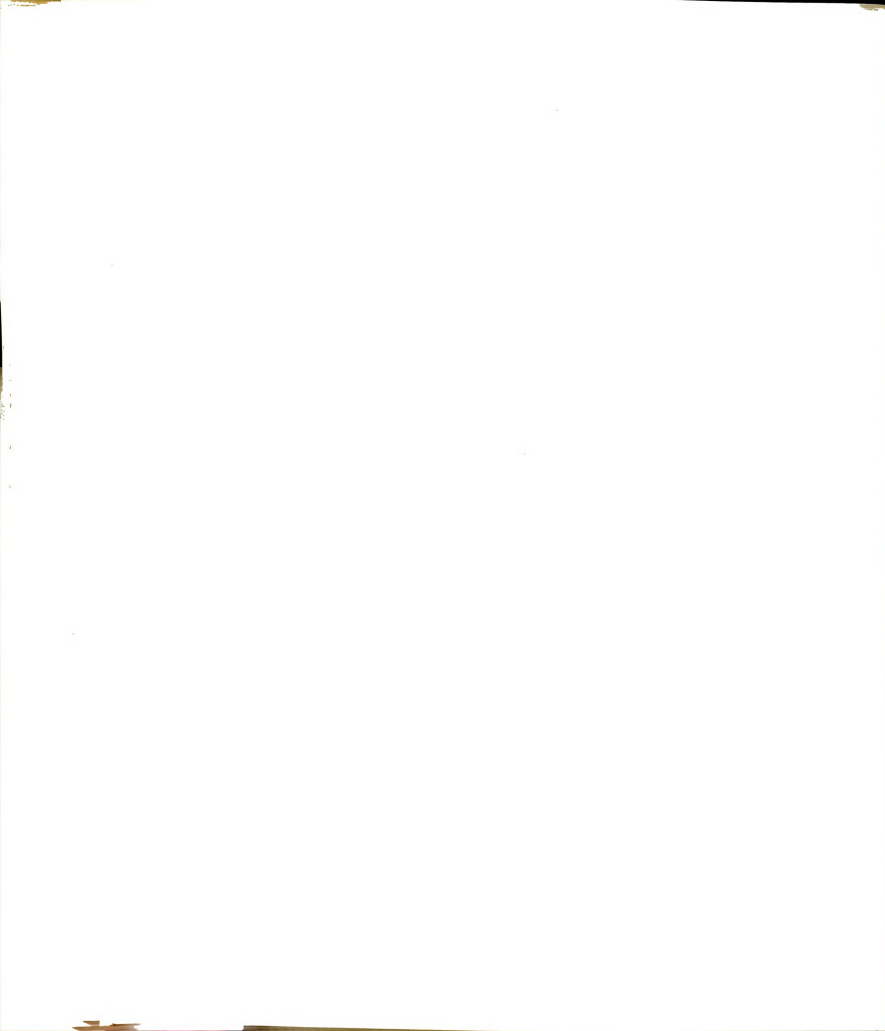


TABLE 4.6.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
6	#328 Age of the infant at the onset of serious socialization, other than weaning A: is higher than 2 years or B: is 2 years or lower Art cluster: 0-4-0-1 Global cluster: 2-0-0-3
6	#339 Child's inferred conflict regarding responsible behavior A: is high or B: is low Art cluster: 5-0-0-0 Global cluster: 2-3-0-0
<u>XXXVI Adolescence</u>	
5	#370 Segregation of adolescent boys A: is complete or partial or B: is absent Art cluster: 5-0-0-0 Global cluster: 2-2-0-1
5	#382 Female initiation rites A: are present or B: are absent Art cluster: 2-0-0-3 Global cluster: 0-3-0-2
<u>XXXVIII Illness and Therapy</u>	
5	#406 Explanations of illness of an "aggression" nature, A: are present or B: are absent Art cluster: 0-4-0-1 Global cluster: 2-1-0-2
<u>XXXX Religion, Magic and Eschatology</u>	
5	#430 Supernatural sanctions for mortality, having an effect on an individual health A: are present or B: are absent or unreported Art cluster: 0-1-0-4 Global cluster: 4-0-0-1

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TABLE 4.6.--Continued.

Relative contribution to the difference between clusters	Cultural variables and incidence of a given descriptor in one or more societies in each polar cluster
5	#431 Supernatural sanctions for mortality having an effect on individual's afterlife A: are present or B: are absent or unreported Art cluster: 1-0-0-4 Global cluster: 0-4-0-1
5	#434 Asceticism in mourning behavior A: is high or B: is low Art cluster: 4-0-0-1 Global cluster: 1-2-0-2
5	#440 Fear of spirits A: is high or B: is low Art cluster: 0-4-0-1 Global cluster: 2-1-0-2
5	#441 Fear of human beings A: is high or B: is low Art cluster: 1-3-0-1 Global cluster: 3-0-0-2



for the placement of a society into a cluster. A plentiful supply of food related significantly to articulation (four societies of five), and a lack of a plentiful supply of food was associated with the societies of the global cluster (four societies of four).

4. Only one writing system variable was found significantly associated with the global-articulated dimension. The absence of a writing system or one which is mnemonics was found to be associated with the global dimension. All the societies of the global cluster manifested this descriptor.

5. Variables of political organization gave additional support to the relationship earlier associates found between the presence of a state organization and the global-articulated dimension. For reference see observation number one taken from part 2, Table 4.5.

6. The one variable of the societal complexity category found to be highly associated with the condition of articulation within a society dealt with the presence of several levels in the national jurisdictional system. All of the societies of the articulated cluster manifested this descriptor.

7. Occupational specialization of a part-time nature or that geared to subsistence only was found to be concomitant with the global direction. The absence of data prevented evaluation of this item for the societies of the articulated cluster.

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8. Two variables of the justice and law were found to be associated with the societies of the global direction. All of the societies of the global cluster manifested social sanctions on the level of private settlements, while the ratio of restitutive to repressive sanctions was found to be high for four of the global societies.

9. One variable of the community organization category was found to give additional support for the relationship of marriage outside of the blood group and the articulated direction. For reference see statement one taken from part 1, Table 4.5.

10. The lineality of kin group variable concerning a patrilineal or double descent lineage was found to be associated with the articulated direction. All five societies of the articulated cluster demonstrated this descriptor.

11. The societies of the global cluster showed a high correlation with the condition of not permitting cousin marriage. All five of the societies demonstrated this descriptor.

12. From the mode of marriage category, the variable concerned with the age of the male at the time of marriage was shown to be a discriminator of the two polar clusters. The descriptor stating that the age of the male at marriage is twenty years or more was highly associated with the global direction.



13. The variable of pregnancy and childbirth category concerning the time period allotted for the observation of postpartum sex taboos was found to be highly correlated with the directions of the global-articulated dimension. Practices of this variable lasting one year or longer were found concomitant with four societies which manifested the global direction, while practices of this nature which lasted less than one year were associated with three of the societies of the articulated cluster.

14. Three descriptors of the variables in the infancy and childhood category were especially prominent in the degree of association shown with the societies of the articulated cluster. These descriptors were high inferred transition anxiety in the young for the period from infancy to childhood, serious socialization beginning before the age of two and high inferred conflict over the performance of responsible behavior.

15. The variable of the adolescence category dealing with the degree of segregation of adolescent boys was found to relate significantly to the articulated direction. Four societies of the five in the articulated cluster evidenced a complete or partial segregation of boys, while three societies of four in the global cluster manifested no such segregation.

16. The variable of the illness and therapy category concerned with the absence of explanations of an aggressive

nature as causes of illness was associated with the articulated condition. All five societies of the articulated cluster evidenced this descriptor.

17. Five variables of the religion, magic and eschatology had descriptors which were found to be associated with one or the other polar cluster. The descriptors associated with the societies of the global cluster were the presence of beliefs about supernatural sanctions for mortality which affected the individual's health and after life, and a high fear of human beings. Two descriptors that demonstrated association with the societies of the articulated cluster were a low fear of spirits and a high incidence of asceticism in mourning behaviors.

Summary

In this chapter the findings from the analysis of the gathered data were presented. The order of presentation followed the procedure outlined in Chapter III. The results are stated below, in outline form:

Question #1

What is the nature of cognitive style of African societies?

Objective A--To find the societies for which Textor data relating to cognitive style are available.

Fourteen African societies (Masai, Ganda, Fon, Ashanti, Venda, Lamba, Nyakyusa, Thonga, Mbundu,

Chagga, Azande, Nuer, Tiv and Tallensi) were selected from a list of four hundred compiled by Textor.

Fifty-two items of the total four hundred sixty-seven taken from Textor were deemed manifestations of the cognitive style described by Witkin.

Objective B--To describe the fourteen African societies selected through Step A-1 in terms of Witkin's cognitive style.

Each of the fourteen societies was given a percentage indicative of the amount of articulation, for those cultural variables associated with cognitive style. The societies were then arranged by the percentage of articulation that each demonstrated.

A set of five societies was derived from each end of the ranking. The group from the most articulated end was called the polar articulated cluster. The societies of the polar articulated cluster were the Masai, Ganda, Fon, Ashanti and the Venda. The other group was called the polar global cluster. The societies of the polar global cluster were the Chagga, Azande, Nuer, Tiv and the Tallensi.

The data of the Textor items deemed as manifestations of cognitive style were examined for their relationship to the polar clusters. A listing of the significant items includes:



1. Community organization variables dealing with the homogeneity of the population,
2. Infancy and childhood variables dealing with development and performance of certain behaviors and the indulgence and affection shown toward the child,
3. The political organization variable dealing with state organization,
4. The writing system variable dealing with the presence of a system employing mnemonics or the absence of a writing system.
5. The societal complexity variables for the number of levels present in a national jurisdictional system.
6. The occupational specialization variable concerned with full or part time specialization.
7. Justice and law variables dealing with type of social sanctions and the ratio of restitutive to repressive sanctions.
8. The lineality of kin group variables for patrilineal or double descent in contrast to quasi-lineage.
9. The cousin marriage variable for permitting such marriages.
10. The mode of marriage variables for the age of the male at the time of marriage.

11. The pregnancy and childbirth variable dealing with postpartum sex taboos and their deviation.
12. The adolescence variable concerned with segregation of boys.
13. The illness and therapy variable for the explanation of illness due to aggression causes.
14. The religion, magic and eschatology variables dealing with beliefs about supernatural sanctions affecting the health of the individual and his afterlife, fear of spirits and fear of human beings.



CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Education is an important enterprise in the newly independent countries of Africa. Through education, Africans hope to develop the skills necessary to increase political, economic and social development. The educational systems are being expanded to produce more graduates. Efforts are being made to increase the relevance of education through the development of "Africanized" curricular packages. Yet the goals of the countries and the personal ambitions of parents and children are being thwarted.

The talent is needed and the motivation is present but still high proportions of those entering school in Primary 1 never graduate. Many never make it to Primary 6. Why? A number of reasons are explored in Chapter I. But one of the basic causes is believed to be an incompatibility between the intellectual demands of the school and the intellectual patterns of the students. This study was an investigation of the culture as they likely relate to the children as learner.



Summary

Several concepts from the fields of psychology and anthropology were used as a theoretical foundations. From psychology the concept of cognitive style furnished the belief that people exhibit consistent patterns of behavior over a variety of activities. Anthropological theory furnished the stand that the culture of an individual molds his personality and intellectual behavior.

This study used the Witkin model of cognitive style to analyze cultural data. The results of the analysis revealed which part of the global-articulated dimension was fostered by the culture of a society.

The sample and the cultural data analyzed, came from Robert Textor's, A Cross-Cultural Summary. Fourteen African countries were selected on the criterion of availability of information available for at least 60 per cent of the four hundred fifty-seven cultural items of Textor. A descriptive composite of factors that influence the development of cognitive style was derived from the works of Witkin and others who have used his model. The composite was matched with Textor's items to ascertain which items were manifestations of cognitive style. Analysis of the data for the selected societies on the items representative of cognitive style revealed that each society contains cultural practices that manifest different degrees of articulation.



A hierarchical arrangement of the societies, based on the amount of articulation manifest in each society, was developed. Taking sets of five from each end of the global-articulated continuum resulted in three sets of societies. Only the two groups formed from each end of the continuum were used in subsequent analysis. These two sets constitute the polar global cluster and the polar articulated cluster. Analysis of the data for the societies in each cluster with the items deemed as manifestations of cognitive style revealed which descriptor of each of the relevant cultural variables was important for placement of a society within the cluster and which variables were important as contributors to the differences between the clusters.

The results of the analysis showed these variables to be the highest contributors to the global-articulated dimension:

1. Community organization variables which dealt with the homogeneity of the population. These included clan structure and marriage outside the blood line.
2. Infancy and childhood variables which dealt with the development of certain behavior and the anxieties that occur because of a nonperformance of these behaviors. Also variables concerned

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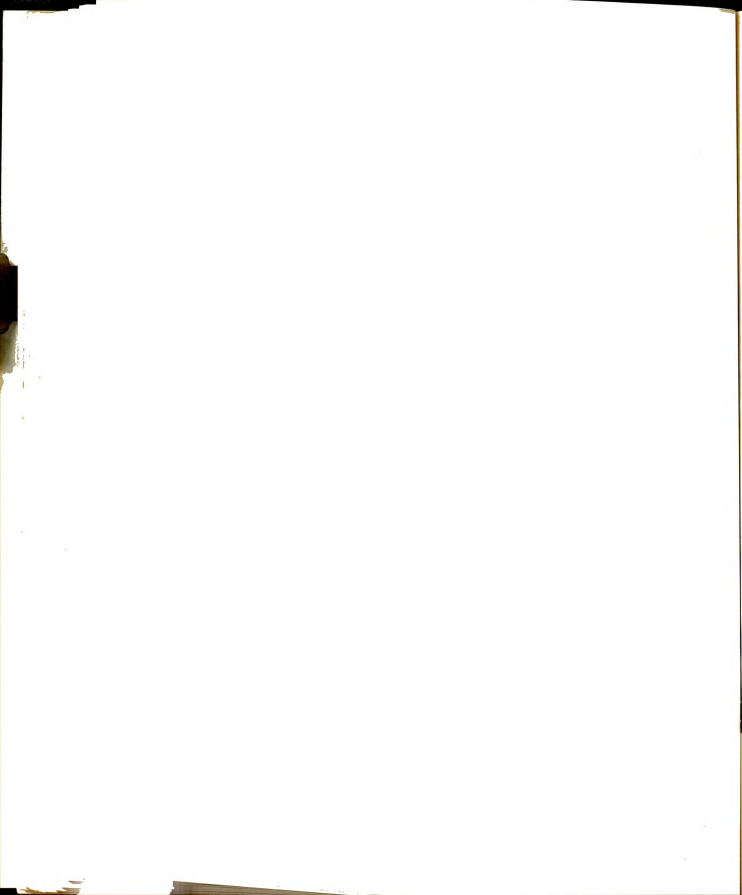
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with the amount of indulgence given the infant and the amount of affection displayed toward the infant were important.

3. The political organization variable which was concerned with the presence of a large state.
4. The demographic variable denoting the presence or absence of a large city was included, and
5. A number of descriptors which are significantly associated with the global direction. Among these were contact with other cultures, acceptance of innovations, and the percentage of occupation specialization within the society.

An additional analysis for the relationship of cognitive style and cultural variables was carried out with the remaining Textor items. The results of the analysis revealed the following variables to be associated with the polarity of a society on the global-articulated continuum.

1. Natural environment variables for the location of the societies in either tropical grasslands and/or in tropical or subtropical rain forests,
2. The settlement variable for the compactness of field settlements,
3. The diet variable for the supply of food available in the societies,
4. The writing system variable dealing with the absence of such a system or one that is mnemonic,



5. The societal complexity variable concerned with the number of levels in the national jurisdictional system,
6. The occupational specialization variable of the presence of full time specialization but not for surplus or part-time specialization only,
7. Justice and law variables dealing with social sanctions,
8. The lineality of kin group variable concerned with the presence of a patrilineal or double descent lineage in opposition to a quasi-lineage,
9. The cousin marriage variable which deals with permitting such practices,
10. The mode of marriage variable concerned with the age of the male at marriage,
11. The pregnancy and childbirth variable dealing with postpartum sex taboo and their duration,
12. An additional infancy and childhood variable about the time at which serious socialization commences,
13. The adolescence variable for the degree of segregation of adolescent boys,
14. The illness and therapy dealing with the absence of explanation of an "aggression nature," and



15. Five variables of religion, magic and eschotology which are presence of beliefs about supernatural sanctions, fear of human beings, fear of spirits and the incidence of asceticism in mourning behaviors.

Conclusions

The conclusions derived as a result of the study are listed below:

1. On a theoretical level, by matching the cultural data of a society with the cognitive style paradigm of Witkin, it appears possible to identify the place of a society on the global-articulated dimension.
2. All of the African societies investigated appeared to manifest different amounts of articulation and thus to occupy different places on the global-articulated dimension.
3. For purposes of analysis and to provide contrast it appeared feasible to derive groups or clusters of societies from each end of the continuum.
4. For the cultural variables that were deemed manifestations of cognitive style, it appeared some variables were more significantly associated with one direction of the dimension, then with the other direction.



5. For the cultural variables that were deemed manifestations of cognitive style it appeared that some variables were more significantly associated with the differences between the two direction of the continuum than were other variables.
6. For the cultural variables that were not deemed manifestations of cognitive style, it appeared that some variables were more significantly associated with one direction of the dimension, than with the other direction.
7. For the cultural variables that were not deemed manifestations of cognitive style, it appeared that some variables were more significantly associated with the differences between the two directions of the continuum than were other variables.

Implications of the Results

Implications from the results of the study can be derived for two areas of interest. One area concerns the effect these results have to the theory of Witkin's cognitive style. While the other area deals with educational practices in the newly independent countries of Africa.



Implications for Witkin's Model

The results of this study were not intended to support or confirm Witkin's theory. The method of operation used excluded these purposes but the results do provide some new perspectives. First the number of factors that are thought to influence the development of cognitive style seems to be increased by this study. In addition to the socialization cluster and the environmental interaction categories, other social and physical conditions seem important. For example, the quantity of food available seems significant and may be a major contributor to the presence of the global direction in some segments of the population.

Certainly the factors involving mother-child relationships and exchange are important but perhaps more emphasis should be given to the "openness" of the society. By this is meant the degree to which a society provides the opportunities for a variety of people to meet and to have interchange. Many of the cultural factors found to contribute the most to the differences between the global and articulated directions fell under this heading. Communities that permitted marriage outside the blood line and were composed of kin-heterogeneous peoples were by far the biggest contributor to the differences between the poles of the global-articulated dimension. Those cultures which had frequent exchange with other cultures were significantly

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less global than societies cut off or isolated from other cultures. The cultures that had developed large states and possessed cities or towns where large numbers of people were bound together by feelings of identity and could meet frequently were found to be associated more with articulation, than societies without state organization and cities.

Still a third aspect that seems probable due to the results of this study is that the factors influencing the development of cognitive style can be ranked by order of significance. Analysis of data for a number of societies that manifest either a global or articulated direction could reveal a syndrome of factors that were significant to the differences between the societies and were important to the predominance of a particular direction. These could be arranged by order of contribution. A dichotomy of major and minor categories that influence cognitive style may be developed. Perhaps it could even be ascertained which variables are the contributors that determine to a large extent the direction developed and which variables are only minor contributors that influence the degree of the direction.

In Dawson's study on the cognitive style of Temne and the Mende the presence or absence of the polygyny is suggested as an influence on the direction of development. The variables under Textor's category of polygyny which were



analyzed in this study revealed none of the variables to be a significantly associated with cognitive style. However, it was found in the current study that post partum sex taboos of long duration are concomitant with the global direction. It could be that for the Temne post partum sex taboos and polygyny are both part of the cultural pattern and it is the separation of mother and infant from the father which leads to a diffusion of child self-identity and not the presence of many wives.

Implications for the Educational Systems of
the Newly Independent African Countries

The results of the study could be used to support the contention of many Africans that the educational systems in Africa need to be changed. The difficulty is less a matter of what content (subject matter) should be included, than of what type of intelligence is being rewarded. British and French educational systems reflect the cultural patterns of the British and French societies. For example, the type of intelligence molded by the cultural patterns of the British society is what schools of the British tradition reward and attempt to develop. To some extent--more in some societies than others--various African societies inculcate different types of intelligence. Therefore, if one assumes that the educational system should utilize and reward the cognitive style that is dominant within the culture, it follows that educational systems should vary in accord with

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variances among the societies. Again, this does not argue that the content should necessarily be different, rather, the methods used to instill the subject and the instrumentation to evaluate progress need to be "Africanized." Specifically, the teaching methods and evaluative criteria need to be attuned to the cultural patterns of the society.

Given the desire for development (economic, political and social) educationists in the African countries need to ask:

1. What relationships between the cognitive style of the people and of the designed learning experiences can be accommodated to maximize learning?
2. Should the cognitive style of the students be changed by the schools?

The answer to the first question is dependent on the cognitive style manifested by each ethnic group of the country and the degree of globalness or articulation inherent in the subject matter being taught. Some subject matter in order to be successfully acquired needs from the student a higher degree of articulation than does other subject matter. For example, science subjects deal with knowledge removed from the embedded context of social and physical reality to a greater extent than literature courses. Thus, methods used to teach science to students with a global style will

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differ from those used for students with an articulated style. More attention has to be given to drawing students with a global style from their dependence on a social world to an understanding of objects in isolation, insofar as this is possible. Early lessons for students with a global style will require more concrete examples. In fact, it could be that students with a global style should only undertake science for the express purpose of applying the knowledge learned to practical uses in the country. Thus, in science a greater attunement of methods with subject matter is necessary for students of a global style, than for students with an articulated style. In a contrasting discipline, (e.g., literature) more attention will be given to matching content and methods for an articulated student than for a global student. In addition to the concern for methodology, there is a need for a concern for evaluation; evaluation should be designed in such a way as to reward each direction of the global-articulated dimension. Caution needs to be expressed that the procedures used in the present study give only a gross identification of a society's cognitive style. Dichotomization of factors involved in cognitive style and the use of polarized descriptions tends to submerge individual differences. Not every mother in a given society would treat her children exactly alike. In larger and more complex societies, likelihood of deviation from the norm is

greater. Thus the educational design and assessment procedure would need to be more complex and to allow for more variance from the generalized norms of cognitive style.

The answer to the second question has two parts. Whether a particular cognitive style is incumbent within a given aspiration of changed national characteristics is one issue. The possession of an articulated style may be advantageous in the ability to perform certain skills. Each society probably needs some articulated individuals, particularly as the structural complexity increases and technical skills are needed. But a population of global individuals has advantages too. Kagan and Kogan aptly state: "In situations where social groups are in conflict over means, goals and values, a cognitive style that facilitates fine articulation and sensitivity to the social environment may be considerably more helpful than a cognitive style encouraging articulation of the self and to external physical space."¹ In a newly independent country, people with a global cognitive style may indeed be more able to function competently than those with an articulated style, composed as such countries typically are of many ethnic groups.

¹Jerome Kagan and Nathan Kogan, "Individual Variations in Cognitive Processes," Carmichael's Manual of Child Psychology, ed. by Paul Mussen (3rd Ed., Vol. 1; New York: John Wiley and Sons, Inc., 1970), p. 1342.

The second issue is the degree to which cognitive styles can, in fact, be deliberately changed. Evidence available seems to indicate that within a cultural system the possibility of changing cognitive style is slight.² In some cases of drastic revolution, governments have been fit to alter the cognitive style through processes of fundamental change of the domestic and public institutions. A probable case for which adequate research data are not available is the People's Republic of China.

Other Research

The results of this study clearly could lead to much additional research. The same methodology could be employed in a number of studies. The size of the sample in the current study though large enough to permit comparisons was far too small to reach conclusions of high confidence. More African societies could be drawn into the research. This may involve selecting societies with less data available but through the use of sophisticated statistical procedures greater reliability of relationship could be

²Several references discuss studies involving change of cognitive style among these are the following: Gail Jean Spitler, "An Investigation of Various Cognitive Styles and the Implication for Mathematics Education" (unpublished doctoral dissertation, Wayne State University, 1970), pp. 35-37; Elizabeth Hartwell, "Cultural Assimilation, Social Mobility and Persistence of Cognitive Style" (unpublished doctoral dissertation, Brandeis University, 1968).

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achieved. Even if one were to use only Textor's data, studies of other regional societies could be undertaken to establish the generality of the findings world wide. Data are available in Textor on Latin America, Asian and South Pacific societies.

The current study only showed that various cultural variables were found to be associated with cognitive style. The degree of relationship among the various variables was never undertaken. For example the study revealed that an abundant food supply was associated with societies manifesting the global direction, but the lack of compactness in fixed settlements is also associated with the global direction and so is a low display of aceticism in mourning behavior. Is there any relationship between those variables in addition to their association with cognitive style? In other words can links be found between the variables that might provide a cluster that produce a particular style? Along this same line, it was mentioned in the section on Implications for Witkin's model, that a hierarchy of major and minor variables influencing cognitive style could be constructed. More research is needed to establish just which categories fall into the major group and which into the minor group.

All of the above suggestions have dealt with the procedure used in the current study. But it should be noted

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that this study was built on secondary sources. Anthropological data are known for its establishment of model characteristics and the conflicts that arise because of the possibility of three cultures to each society. Thus the results of the present study need to be examined by empirical procedures. The results of the present study can be framed to five a number of hypotheses. A cognitive style could be hypothesized from the data and tested in the field on life subjects for confirmation.

The comparison of a derived cognitive style by use of anthropological data could be matched with cognitive style obtained through instrumentation which might lead to the development of an accultivation-enculturation scale. But research is needed to establish linkages of cognitive style with the degree of culture change. The linkages should explore the differences both on a urban-rural continuum and a Westernized-traditional continuum.

Finally more research is needed on the connections of cognitive style and methods used in education.

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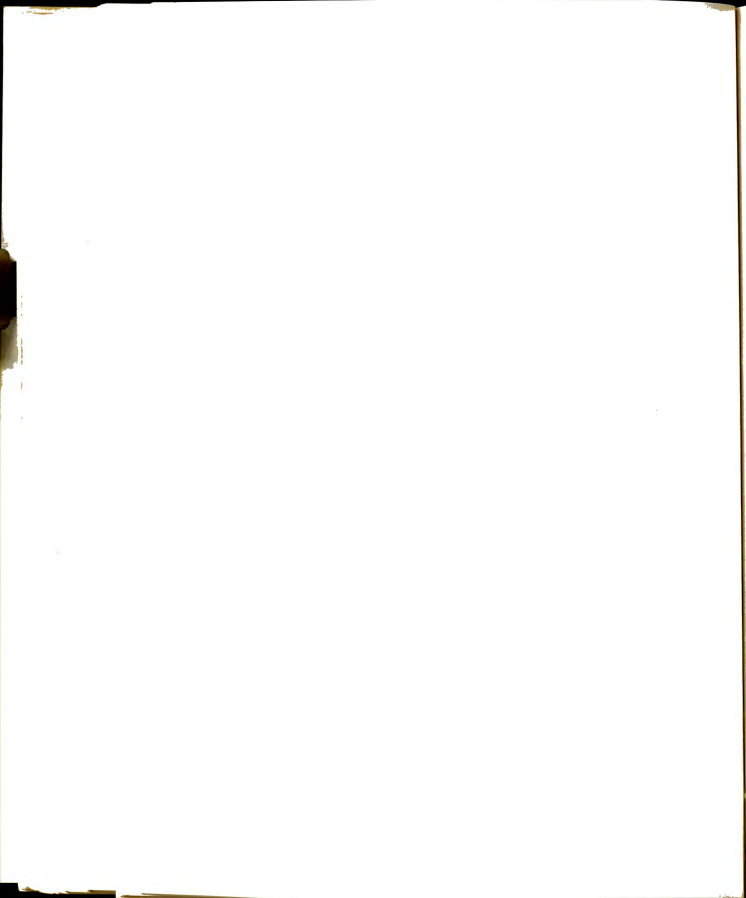


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APPENDICES

APPENDIX A

A SAMPLE OF THE MAJOR CULTURAL CATEGORIES USED BY
TEXTOR, WITH EXPLANATIONS OF CODES, SYMBOLS
AND THEIR SOURCES

A Sample of the Major Cultural Categories Used by
Textor, with Explanations of Codes, Symbols
and their Sources.

- III Natural Environment: The codings for this category
(33-43) were taken from Frank W. Moore's
unpublished work on type of
natural environment in 1962,
New Haven, Human Relations Area
Files, The codes utilized were:
- S - Tropical grassland (including savanna with tall
and low grasses)
 - G - Temperate grassland (including bushweld, seasonal
grassland, shrub and fern heath)
 - E - Desert grasses and shrubs (semi-desert, arid
regions)
 - D - Desert (little or no vegetation)
 - T - Tropical rain forest (including mangrove swamp
forest)
 - O - Monsoon forest (tropical and semi-tropical areas
with pronounced seasons)
 - R - Sub-tropical rain forest (including tropical
mountain rain forest, high areas of little
seasonal change)
 - B - Sub-tropical bush (includes forest and bush,
tropical dry forest, open jungle, shrub and
thorn)
- IV Settlement Pattern: Origin of these is Murdock's
(44-47) Ethnographic Atlas, Column 30.
The codes are:
- B - Fully migratory or nomadic bands
 - H - Separated hamlets where several such form a
more or less permanent single community
 - N - Neighborhoods of dispersed family homesteads
 - S - Seminomadic communities whose members wander
in lands for at least half of the year but
occupy a fixed settlement at some season
or seasons

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- T - Semisedentary communities whose members shift from one to another fixed settlement at different seasons or who occupy more or less permanently or single settlement from which, however, a substantial proportion of the population departs seasonally to occupy shifting camps
- V - Compact and relatively permanent settlements
- W - Compact but impermanent villages
- X - Complex settlements consisting of a neglected village or town with outlying homesteads or satellite hamlets



APPENDIX B

THE ITEMS OF TEXTOR'S ANALYZED IN THE STUDY,
SHOWING PORTION THAT IS "A" AND PORTION
THAT IS "B"

The Items of Textor's Analyzed in the Study,
Showing Portion that is "A" and Portion
that is "B"

I. Latitude

10. A: Located in the tropics (within $23\frac{1}{2}^{\circ}$ of the equator)
or B: located outside of the tropics
11. Where the latitude is A: 60° or greater
or B: latitude is less than 60°
12. Where the latitude is A: 50° or greater
or B: latitude is less than 50°
13. Where the latitude is A: 40° or greater
or B: latitude is less than 40°
14. Where the latitude is A: 30° or greater
or B: latitude is less than 30°
15. Where the latitude is A: 20° or greater
or B: latitude is less than 20°
16. Where the latitude is A: 10° or greater
or B: latitude is less than 10°

II. Linguistic Affiliation (L. Affiliation = Linguistic Affiliation)

17. L. Affiliation is A: Niger-Congo
or B: not
18. L. Affiliation is A: Chari-Nile
or B: not
19. L. Affiliation is A: Afro-Asiatic
or B: not
20. L. Affiliation is A: Niger-Congo
or B: Afro-Asiatic
21. L. Affiliation is A: Indo-European
or B: not
22. L. Affiliation is A: Indo-European
or B: Afro-Asiatic

23-32 Not Applicable

III. Natural Environment (N.E. = Natural Environment)

33. N.E. is A: "very harsh" (desert, desert grasses
and shrubs, tundra or high plateau steppes)
or B: not
34. N.E. is A: desert or desert grasses and shrubs
or B: not



- 35. N.E. is A: tundra
or B: not
- 36. N.E. is A: "very harsh" (33) or subtropical bush
or temperate grassland
or B: not
- 37. N.E. is A: subtropical
or B: not
- 38. N.E. is A: temperate grassland
or B: not
- 39. N.E. is A: northern coniferous forest
or B: not
- 40. N.E. is A: temperate woodland or temperate forest
or B: not
- 41. N.E. is A: tropical grassland
or B: not
- 42. N.E. is A: tropical or subtropical rain forest
or monsoon forest
or B: not
- 43. N.E. is A: tropical rain forest
or B: not

IV. Settlement Pattern

- 44. Settlements are A: fixed
or B: nonfixed
- 45. If fixed, are A: compact
or B: noncompact
- 46. A: Nonfixed and where movement is nomadic
or B: remaining substantively coded cultural
- 47. A: Nonfixed, movement is nomadic
or B: nonfixed, movement is non-nomadic

V. Diet

- 48. Food supply is A: secure (shortages are rare or occasional)
or B: not secure (shortages frequent or annual)
- 49. Food is A: plentiful
or B: less than plentiful
- 50. A: Daily protein intake 90gm or higher
or B: protein intake 80gm or lower



VI. Subsistence

A. Food Production

- 51. Subsistence is primarily A: by food production
or B: by food gathering
- 52. Subsistence is primarily A: by agriculture
or B: means other than agriculture

B. Intensity of Agriculture and Food Production

- 53. F.P. is by A: intensive agriculture
or B: simple agriculture
- 54. F.P. by A: intensive or simple agriculture
food production
or B: incipient food production
- 55. F.P. by A: intensive agriculture
or B: simple agriculture
- 56. F.P. by A: simple agriculture
or B: incipient food production

C. Types of Agriculture

- 57. Subsistence primarily by A: shifting agric.
or B: other than shifting agric.
- 58. Subsistence primarily by A: horticulture
or B: other than horticulture
- 59. Crops A: mainly cereal
or B: mainly root
- 60. Crops A: mainly cereal & cultivation
intensive-irrigated
or B: mainly cereal & crops mainly
intensive-dry

D. Subsistence by Animal Husbandry

- 61. Subsistence primarily by A: animal husbandry
or B: remaining cultures

E. Types of Animal Husbandry

- 62. Husbandry of some kind is A: present
or B: husbandry is absent
- 63. Husbandry, if present, is A: bovine, equine,
camel-like or deer-like
or B: pigs, sheep, or goats
- 64. A: Bovine is principal form of husbandry
or B: bovine as principal form absent



- 65. Where bovines present, are A: milk
or B: not milked
- 66. A: Pigs principal form of husbandry
or B: pigs as principal form absent
- 67. A: Sheep or goats principal form of husbandry
or B: sheep or goats as principal form absent

F. Subsistence by Gathering

- 68. Subsistence is primarily A: by hunting
or B: remaining cultures
- 69. Subsistence is primarily A: by fishing
or B: remaining cultures
- 70. Subsistence primarily A: by collecting
or B: remaining cultures

VII. Technology

- 71. A: Metal working is present
or B: metal work absent or unimportant
- 72. A: Plow is present
or B: plow absent
- 73. Weaving A: present
or B: absent or unimportant
- 74. Manufacture of pottery is A: present
or B: absent or unimportant
- 75. Leather working A: present
or B: absent or unimportant
- 76. Boat building A: present
or B: absent or unimportant

VIII. Writing System (W.S. = Writing System)

- 77. W.S. A: is a alphabetic or phonetic
or B: is mnemonic or absent
- 78. W.S. is A: either alphabetic or phonetic or
mnemonic
or B: absent

IX. Demography

- 79. A: where a city is present
or B: no city
- 80. A: city or town present
or B: no city or town

- 81. Average Community size A: 200+
or B: smaller than 200
- 82. Average community size A: 50+
or B: smaller than 50
- 83. With no city or town, aver. comm. size is A:
between 200-999
or B: smaller than 200

X. Political Organization

A. Level of political integration

- 84. Level of political integration is A: the
large state
or B: lower
- 85. Level of political integration is A: large
state or little state
or B: lower
- 86. Level of political integration is A: large
state or minimal state
or B: lower
- 87. Level of political integration is A: large
state, little state, minimal state or
autonomous community
or B: lower

B. Succession to headmanship

- 88. Headmanship succession A: non-hereditary
or B: hereditary
- 89. Non-hereditary headmanship-succession by A:
consensus
or B: means other than consensus
- 90. Hereditary headmanship A: succession patrilineal
or B: succession is matrilineal

XI. Societal Complexity (S.C. = Societal Complexity)

- 91. A: S.C. is high
or B: S.C. low
- 92. Index of Social development A: high
or B: low
- 93. Overall social structural complexity is A: high
or B: low
- 94. A: Hierarchy of national jurisdiction has 4
or 3 levels
or B: hierarchy 2, 1 or no levels



95. Hierarchy of national jurisdiction has A: 4,3,2 levels
or B: 1 or no levels
96. Hierarchy of national jurisdiction has A: 4,3,2 or 1 level
or B: no levels
97. Hierarchy of local jurisdiction has A: 4 levels
or B: 3 or 2 levels
98. Hierarchy of local jurisdiction has A: 4 or 3 levels
or B: 2 levels
99. National hierarchy absent, hierarchy of local jurisdiction has A: 4 or 3 levels
or B: 2 levels
100. A: Hierarchies are more complex than the "simplest" (e.g. more complex than 2 levels with no national levels)
or B: hierarchies are the "simplest" (2 local levels with no national levels)
101. Number of communal activities is A: above mediam (5 or more)
or B: below mediam (4 or fewer)

XII. Stratification (C.S. = Class Stratification)

102. C.S. is A: present
or B: absent
103. C.S. present & A: based on criteria other than wealth
or B: based on wealth or C.S. absent
104. C.S. A: based on wealth or occupational status
or B: based on wealth or occupational status absent
105. C.S. A: based on occupational status
or B: absent if based on occupational status
106. C.S. A: if present, based on wealth
or B: if present, based on something other than wealth
107. C.S. if present A: based on occupational status
or B: based on something other than occupational status
108. C.S. if present A: based on a hereditary aristocracy
or B: based on something other than a hereditary aristocracy

- 109. Castes are A: present
or B: absent
- 110. Slavery is A: present
or B: absent

XIII. Work Organization (W.O. = Work Organization)

- 111. W.O. having A: a voluntary aspect are reported
or B: voluntary aspect are not reported
- 112. W.O. having A: a contractual aspect are reported
or B: contractual aspect are not reported
- 113. W.O. having A: a custodial aspect are reported
or B: custodial aspect are not reported
- 114. W.O. having A: a familial aspect are reported
or B: familial aspect are not reported

XIV. Occupational Specialization (O.S. = Occupational Specialization)

A. Degree of Occupational Specialization

- 115. O.S. A: is full time & for surplus production
or B: is full time, but not for surplus
or part-time only
- 116. O.S. A: is full time, whether or not for
surplus production
or B: is part-time only
- 117. Percentage of occupations that are special-
ized A: is high
or B: is medium or low
- 118. Percentage of occupations that are special-
ized is A: high or medium
or B: low
- 119. Craft specialization score A: is high
or B: is medium or low
- 120. Craft specialization score A: is high
or medium
or B: is low
- 121. With a state present, the craft special-
ization score A: is high or medium
or B: is low
- 122. Without a state present, craft special-
ization score A: is high or medium
or B: is low

- 123. With stratification present, the C.S. score
A: is high or medium
or B: is low
- 124. Without stratification present, the C.S.
score A: is high or medium
or B: is low

B. Occupational Specialization by Sex

- 125. Ratio of male to female occupational special-
ization A: is high
or B: is medium or low
- 126. Ratio of male to female occupational special-
ization A: is high or medium
or B: is low
- 127. Female contribution to subsistence A: is
above the medium
or B: is below the medium
- 128. Subsistence primarily by agriculture, work
mainly A: done by men
or B: done by women
- 129. Weaving mainly A: done by men
or B: done by women
- 130. Leather working is mainly A: done by men
or B: done by women
- 131. Construction is permanent houses or the
erection of temporary dwellings is
mainly done A: by men
or B: by women

XV. Economics

- 132. Econ. exchange A: involves the use of money
or B: does not involve the use of money
- 133. Contracted debts A: are significantly present
or B: are moderately present or absent
- 134. Income-producing property is A: 100% indi-
vidually owned
or B: less than 100% individually owned
- 135. Individual ownership of economically
significant property A: is present
or B: is negligible or absent
- 136. Full time entrepreneurs A: are present
or B: are absent

137. Invidious display of wealth A: is strongly emphasized
or B: is moderately, little or negatively emphasized

XVI. Justice and Law

138. Superordinate justice A: is present
or B: is absent
139. Superordinate punishment A: is present
or B: is absent
140. Level of Social sanction A: is the public corporeal sanction
or B: is private settlement
141. Level of social sanction A: is the public corporeal sanction
or B: is the public property sanction or private settlement
142. Level of social sanction A: is the public corporeal sanction or public property sanction
or B: is private settlement
143. Ratio of restitutive to repressive sanctions
A: is high
or B: is medium or low
144. Ratio of restitutive to repressive sanctions
A: is high
or B: is low
145. Legal role differentiation A: is high
or B: is medium or low
146. Legal role differentiation A: is high or medium
or B: is low
147. Codified laws A: are present
or B: are unimportant or absent
148. Incidence of personal crime A: is above the medium
or B: is below the medium
149. Incidence of theft A: is above the medium
or B: is below the medium

XVII. Jurisprudence and Medicine

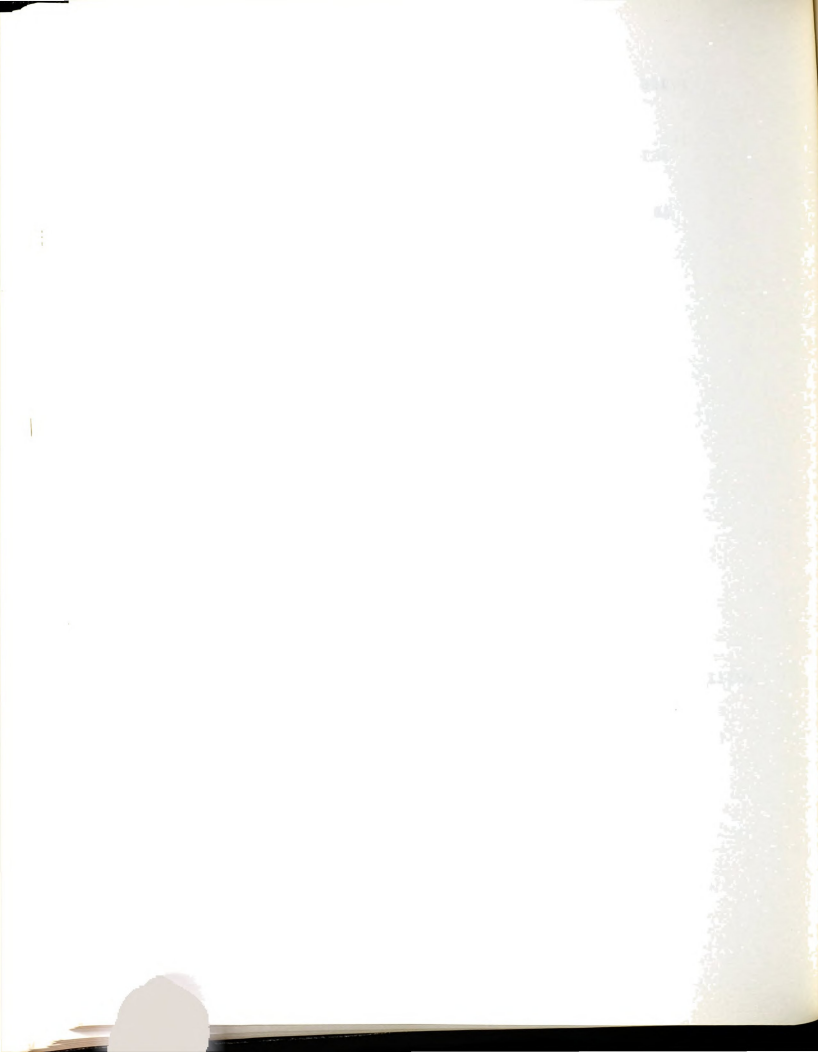
150. Differentiation of the juridical agency from all other agencies A: is high
or B: is low

151. Differentiation of the medical agency from all other agencies A: is high
or B: is low
152. Differentiation of the juridical agency from the medical agency A: is high
or B: is low
153. Division of labor among juridical specialists and subunits A: is high
or B: is low
154. Division of labor among medical specialists and subunits A: is high
or B: is low
155. Extent of training of juridical specialists A: is high
or B: is low
156. Extent of training of medical specialists A: is high
or B: is low
157. Extent of hierarchization of the juridical agency A: is high
or B: is low
158. Extent of development of medical subsystems A: is high
or B: is low
159. Degree of localization of juridical activity A: is high
or B: is low
160. Degree of localization of medical activity A: is high
or B: is low
161. Degree of control over clients by the juridical agency A: is high
or B: is low
162. Degree of control over clients by the medical agency A: is high
or B: is low
163. Emphasis on individual volition as the cause of crime A: is high
or B: is low
164. Emphasis on individual volition as the cause or source of illness A: is high
or B: is low
165. Juridical client's comments are disregarded or used against him A: to a high extent
or B: to a low extent

- 166. Medical client's comments are regarded as relevant in diagnosis and cure A: to a high extent
or B: to a low extent
- 167. Juridical solution is based on the client's actions A: to a high extent
or B: to a low extent
- 168. Diagnosis and cure are based on client's moral and social actions A: to a high extent
or B: to a low extent
- 169. Degree of manipulation of the client in juridical matters A: is high
or B: is low
- 170. Degree of manipulation of the client in medical matters A: is high
or B: is low
- 171. Juridical client is hampered from returning to normal social roles as a consequence of crime A: to a high extent
or B: to a low extent
- 172. Medical client is hampered from returning to normal social roles as a consequence of illness A: to a high extent
or B: to a low extent
- 173. Social and emotional support given to the juridical client during judgment and punishment A: is high
or B: is low
- 174. Social and emotional support given to the medical client during diagnosis and treatment A: is high
or B: is low

XVIII. Community Organization

- 175. Community is A: "Kin-homogeneous" e.g. clan-community or a deme
or B: Kin heterogeneous
- 176. A: Community is a clan-community or a community structured or segmented on a clan basis
or B: remaining coded cultures
- 177. A: Community is a single clan-community and exogamous
or B: remaining substantively coded cultures
- 178. A: Community is segmented on a clan basis and exogamous
or B: remaining substantively coded cultures



- 179. A: Community is structured on a nonclan basis
and commonly exogamous
or B: remaining substantively coded cultures
- 180. A: Community is commonly exogamous
or B: is commonly nonexogamous
- 181. A: Community is a deme
or B: remaining substantively coded cultures
- 182. A: Community is structured on a nonclan basis
or agamous
or B: remaining substantively coded cultures

XIX. Largest Noncognatic Kin Group

- 183. Largest noncognatic Kin group is the A: moiety
or B: phratry, sib or lineage
- 184. Group A: is the moiety or phratry
or B: is the sib or lineage
- 185. Group A: is the moiety or phratry or sib
or B: is the lineage

XX. Lineality of Kin Group

- 186. A: Kin group is exclusively patrilineal
or B: remaining cultures
- 187. A: Kin group is exclusively matrilineal
or B: remaining substantively coded cultures
- 188. A: Kin group is exclusively cognatic
or B: remaining cultures
- 189. Kin group is A: double descent
or B: other than double descent
- 190. Kin group is A: patrilineal or double descent
or B: is matrilineal
- 191. Kin group is A: the patrilineal or double descent
or B: is the quasi-lineage
- 192. A: only kin group present is a kindred or else
bilateral descent is inferred
or B: remaining cultures
- 193. A: kindred is specifically reported present
or B: remaining cultures
- 194. A: Ramage is present
or B: remaining culture
- 195. Kindred A: rather than the ramage, is specifically
reported present
or B: ramage, rather than kindred, is specifi-
cally reported present

XXI. Inheritance

- 196. Individual rights in real property and rules for inheritance A: are present
or B: are absent
- 197. Rules for the inheritance of real property, if present A: favor either the male heir or line or the female heir or line
or B: do not favor
- 198. Rules for the inheritance of real property, if present A: favor the male heir or line
or B: favor the female heir or line
- 199. Rules for the inheritance of movable property, if present A: favor either the male heir or line or the female heir or line
or B: do not favor
- 200. Rules for the inheritance of movable property, if present, favor A: the male heir or line
or B: the female heir or line

XXII. Marital Residence (M.R. = Marital Residence)

- 201. M.R. A: is nonoptional
or B: is ambilocal or neolocal
- 202. M.R. is A: ambilocal
or B: other than ambilocal
- 203. M.R. is A: neolocal
or B: other than neolocal
- 204. M.R. A: is patrilocal, virilocal or avunculocal
or B: is ambilocal or neolocal
- 205. M.R. A: is patrilocal
or B: is other patrilocal
- 206. M.R. A: is avunculocal
or B: is other than avunculocal
- 207. M.R. A: is matrilocal or uxoriocal
or B: is ambilocal or neolocal
- 208. M.R. A: is matrilocal
or B: is other than matrilocal
- 209. M.R. A: is patrilocal, virilocal or avunculocal
or B: is matrilocal or uxoriocal
- 210. M.R. A: is patrilocal
or B: is matrilocal
- 211. M.R. A: is virilocal
or B: is uxoriocal
- 212. M.R. A: is avuncular
or B: is matrilocal

XXIII. Cousin Marriage (C.M. = Cousin Marriage)

- 213. C.M. is A: permitted
or B: not permitted
- 214. C.M., if permitted, is A: unilateral
or B: other than unilateral
- 215. C.M., if permitted, is A: duolateral
or B: other than duolateral
- 216. C.M., if permitted, is A: trilateral
or B: other than trilateral
- 217. C.M., if permitted A: is quadrilateral
or B: is other than quadrilateral
- 218. Excised
- 219. C.M., if permitted A: is duolateral
or B: is tri or quadrilateral
- 220. A: C.M. in some form or other is prescribed
or preferred
or B: remaining substantively coded cultures
- 221. A: Matrilineal cross C.M. is prescribed or
preferred
or B: remaining substantively coded cultures
- 222. Kin group patrilineal, matrilineal cross-C.M.
A: is prescribed or preferred
or B: is not prescribed or preferred
- 223. Kin group matrilineal, matrilineal cross-C.M.
A: prescribed or preferred
or B: not prescribed or preferred
- 224. C.M. A: is preferentially or permissively
either patri or matrilateral
or B: is preferentially or permissively
symmetrical
- 225. C.M. A: is preferentially or permissively
patrilateral
or B: is preferentially or permissively
matrilateral

XXIV. Cousin Terminology

- 226. Cultures were the cousin terminology A: is
of Crow, Omaha or Iroquois is type
or B: is other than these
- 227. A: where the cousin terminology is of Crow
or Omaha type
or B: remaining substantively coded cultures
- 228. A: where cousin terminology is of Crow type
or B: remaining substantively coded cultures

- 229. A: where cousin terminology is of Omaha type
or B: remaining substantively coded cultures
- 230. A: where cousin terminology is of Iroquois type
or B: remaining substantively coded cultures
- 231. A: where cousin terminology is of Eskimo or Hawaiian type
or B: remaining substantively coded cultures.
- 232. A: where cousin terminology is of Eskimo type
or B: remaining substantively coded cultures
- 233. A: where cousin terminology is of Hawaiian type
or B: remaining substantively coded cultures
- 234. A: where the cousin terminology is of Crow, Omaha or Iroquois type
or B: where cousin terminology is of Eskimo or Hawaiina type
- 235. A: cousin terminology is of descriptive type
or B: remaining substantively coded cultures

XXV. Family Organization

- 236. Family is A: of an extended type
or B: of an independent type
- 237. A: family is of the large extended type
or B: remaining substantively coded cultures
- 238. A: family is of the small extended types
or B: remaining substantively coded cultures
- 239. A: family is of the stem extended type
or B: remaining substantively coded cultures
- 240. Family, if extended A: is large
or B: is small or stem
- 241. Family, if extended A: is large or small
or B: is stem

XXVI. Polygyny

- 242. Marriage A: is commonly or occasionally polygynous
or B: is monogamous
- 243. Polygyny, if present has A: a high incidence with 40% or more wives--estimated to be polygynous
or B: a low incidence--less than 40%
- 244. If commonly P., is A: preferentially sororal
or B: not preferentially sororal



- 245. If commonly P., type where co-wives A: dwell together
or B: dwell separately
- 246. A: family is independent and marriage is commonly P. and preferentially sororal
or B: remaining substantively coded cultures
- 247. A: family is independent and marriage is commonly P. and not preferentially sororal
or B: remaining substantively coded cultures
- 248. Extended family A: marriage commonly or occasionally P.
or B: marriage is monogamous
- 249. Independent family A: marriage is commonly or occasionally P.
or B: marriage is monogamous
- 250. Patrilineal Kin group A: marriage is commonly or occasionally P.
or B: marriage is monogamous
- 251. Matrilineal Kin group A: marriage is commonly or occasionally P.
or B: marriage is monogamous
- 252. Exclusively cognatic Kin group A: marriage is commonly or occasionally P.
or B: marriage is monogamous
- 253. A: family independent and marriage is monogamous
or B: remaining substantively coded cultures

XXVII. Authority Within the Family

- 254. Household authority is A: on the father's side
or B: on the mother's side
- 255. Grandparental authority over parents is A: present
or B: absent
- 256. Grandparent and grand child are A: friendly equals
or B: not friendly equals

XXVIII. Avoidances

- 257. Severity of sister avoidance is A: high
or B: low
- 258. Severity of son's wife avoidance is A: high
or B: low
- 259. Severity of mother-in-law avoidance A: is high
or B: is low

XXIX. Mode of Marriage

- 260. Age of male at marriage A: is less than 20
or B: is 20 or over
- 261. A: female marriage occurs at or before puberty
or B: remaining substantively coded cultures
- 262. Wives obtained, involves A: the presence of
some consideration
or B: absence of consideration
- 263. Wives obtained A: by relatively difficult means
bride-price, bride-service or exchanging a
female relative
or B: by relatively easy means, token bride-
price, gift exchange, absence of consideration
or receipt of dowry
- 264. A: bride price
or B: remaining substantively coded cultures
- 265. A: bride-service
or B: remaining substantively coded cultures
- 266. A: bride-price
or B: bride-service
- 267. A: token bride-price
or B: remaining substantively coded cultures
- 268. A: bride-price
or B: token bride-price
- 269. A: exchanging of female relative
or B: remaining substantively coded cultures
- 270. A: gift exchange
or B: remaining substantively coded cultures
- 271. A: receipt of dowry
or B: remaining substantively coded cultures

XXX. Divorce

- 272. Divorce rate A: is high
or B: is low
- 273. Kin group noncognatic, D.R. A: is high
or B: is low
- 274. Kin group patrilineal, D.R. A: is high
or B: is low
- 275. Kin group exclusively cognatic, D.R. A: is high
or B: is low
- 276. Kindred the only Kin group present or with
bilateral inferred D.R. A: is high
or B: is low

XXXI. Status of Women

- 277. A: inferior or subjected
or B: not strongly inferior or subjected
- 278. Property rights in female are A: present
or B: unimportant or absent
- 279. Wife-lending or wife-exchange is A: present
or B: unimportant or absent

XXXII. Fertility

- 280. Composite fertility level A: is high
or B: is low
- 281. Incidence of sterility A: is high
or B: is low

XXXIII. Pregnancy and Childbirth

- 282. Strength of desire for children A: is high
or B: is low or absent
- 283. Severity of penalties for barrenness A:
is high
or B: is low or absent
- 284. Contraception is A: practiced
or B: not practiced
- 285. Sex taboo during pregnancy is A: present
or B: absent or inferred absent
- 286. Number of food taboos during pregnancy A:
is high
or B: is low or absent
- 287. Isolation of female in childbirth is A: practiced
or B: not practiced
- 288. Delivery of a child A: may be attended by the
husband
or B: may not be attended
- 289. Delivery of a child A: may be attended by
a male doctor
or B: may not be attended
- 290. Female after delivery A: are isolated in
a special shelter
or B: are not so isolated
- 291. Women after delivery A: are confined to the
dwelling
or B: are not confined
- 292. A: practices to beautify the newborn are
present
or B: such practices are absent or inferred
absent

- 293. A: importance of practices to bring good
luck to the newborn child is high
or B: importance of such practice is low
or absent
- 294. A: practices to protect the newborn child
from harmful influences are present
or B: such practices are absent or
inferred absent
- 295. Severity of punishment for abortion A: is high
or B: is low or absent
- 296. Infanticide A: is present
or B: is absent or inferred absent
- 297. Twins are A: unwelcome and one or both killed
or B: not unwelcome and not killed
- 298. Postpartum sex taboo A: lasts longer than
one year
or B: lasts one month or less
- 299. Postpartum sex taboo A: is longer than one
year
or B: lasts one year or less
- 300. Postpartum sex taboo A: lasts longer than
six months
or B: lasts six months or less
- 301. Postpartum sex taboo A: lasts longer than
one month
or B: lasts one month or less

XXXIV. Infancy and Childhood

A. Early Satisfaction Potential

- 302. Average early satisfaction potential A:
is high
or B: is low
- 303. Early oral satisfaction potential A:
is high
or B: is low
- 304. Early anal satisfaction potential A:
is high
or B: is low
- 305. Early sexual satisfaction potential A:
is high
or B: is low
- 306. Early dependence satisfaction A: is high
or B: is low



- 307. Early aggression satisfaction A: is high
or B: is low
- B. Socialization Anxiety
 - 308. Average socialization anxiety A: is high
or B: is low
 - 309. Oral socialization anxiety A: is high
or B: is low
 - 310. Anal socialization anxiety A: is high
or B: is low
 - 311. Sexual socialization anxiety A: is high
or B: is low
 - 312. Dependence socialization anxiety A: is high
or B: is low
 - 313. Aggression socialization anxiety A: is high
or B: is low
- C. Mother-Child Arrangements
 - 314. Incidence of mother-child households A:
is high
or B: is low
 - 315. Mother and nursing child customarily sleep
A: in the same bed
or B: in different beds
 - 316. Exclusive mother-son sleeping arrangements
last A: one year or longer
or B: less than one year
- D. Treatment of the Infant
 - 317. Display of affection toward the infant-
fondling, caressing, playing with him
A: is high
or B: is low
 - 318. Overall indulgence of the infant A: is high
or B: is low
 - 319. Protection of the infant from environmental
discomforts A: is high
or B: is low
 - 320. Degree of drive reduction--considering
particularly hunger, thirst and
unidentified discomforts A: is high
or B: is low
 - 321. Immediacy (e.g. speed) of reduction of
the infant's drives A: is high
or B: is low

- 322. Consistency of reduction of the infant's drives A: is high
or B: is low
- 323. Constancy of presence of the infant's nurturant agent A: is high
or B: is low
- 324. Pain inflicted on the infant by the nurturant A: is high
or B: is low or negligible
- 325. Degree of diffusion among the infant's nurturant agents A: is high
or B: is low
- 326. Inferred transition anxiety between infancy and childhood A: is high
or B: is low

E. Transitional Ages

- 327. Age of the infant at time of reduced contact with the mother A: is higher than 2 yrs.
or B: is 2 years or lower
- 328. Age of the infant at the onset of serious socialization, other than weaning A:
is higher than 2 yrs.
or B: is 2 years or lower
- 329. Age at toilet training A: is 2 yrs or higher
or B: is lower than 2 yrs.
- 330. Age of the infant at the time of weaning
A: is 2.5 yrs. or higher
or B: is lower than 2.5 yrs.
- 331. Age at the beginning of independence training A: is 3.8 yrs. or higher
or B: is lower than 3.8 yrs.
- 332. Age at beginning of modesty training
A: is 6 yrs or higher
or B: is lower than 6 yrs.
- 333. Age at the beginning of training in heterosexual play inhibition A: is
8 yrs or higher
or B: is lower than 8 yrs.

F. Treatment of the Child

- 334. Indulgence of the child A: is high
or B: is low
- 335. Initial indulgence of dependency A: is high
or B: is low

- 336. Total positive pressure toward developing responsible behavior in the child A:
is high
or B: is low
- 337. Child's inferred anxiety over nonperformance of responsible behavior A: is high
or B: is low
- 338. Child's inferred anxiety over performance of responsible behavior A: is high
or B: is low
- 339. Child's inferred conflict regarding responsible behavior A: is high
or B: is low
- 340. Total positive pressure toward developing nurturant behavior in the child A: is high
or B: is low
- 341. Child's inferred anxiety over nonperformance of nurturant behavior A: is high
or B: is low
- 342. Child's inferred anxiety over performance of nurturant behavior A: is high
or B: is low
- 343. Child's inferred conflict regarding nurturant behavior A: is high
or B: is low
- 344. Total positive pressure toward developing self-reliant behavior in the child A:
is high
or B: is low
- 345. Child's inferred anxiety over nonperformance of self-reliant behavior A: is high
or B: is low
- 346. Child's inferred anxiety over performance of self-reliant behavior A: is high
or B: is low
- 347. Child's inferred conflict regarding self-reliant behavior A: is high
or B: is low
- 348. Total positive pressure toward developing achievement behavior in the child A:
is high
or B: is low

- 349. Child's inferred anxiety over nonperformance of achievement behavior A: is high
or B: is low
- 350. Child's inferred anxiety over performance of achievement behavior A: is high
or B: is low
- 351. Child's inferred conflict regarding achievement behavior A: is high
or B: is low
- 352. Total positive pressure toward developing obedient behavior in the child A: is high
or B: is low
- 353. Child's inferred anxiety over nonperformance of obedient behavior A: is high
or B: is low
- 354. Child's inferred anxiety over performance of obedient behavior A: is high
or B: is low
- 355. Child's inferred conflict regarding obedient behavior A: is high
or B: is low

XXXV. Adolescence

- A. Adolescent Peer Groups (A.P.G. = Adolescent Peer Groups)
 - 356. A.P.G. or pairs A: are present in a setting of courtship
or B: are absent
 - 357. A.P.G. A: are present in a setting of courtship
or B: are absent
 - 358. A.P.G. A: are present in a setting work and public gatherings and leisure, or of public gathering and (leisure, or of leisure only)
or B: present only in a setting of leisure or else are absent
 - 359. A.P.G. are A: present in a setting of work and public gatherings and leisure or at least of public (gatherings and leisure)
or B: present only in a setting of leisure or else are absent
 - 360. Excluded

- 361. A.P.G. in a work setting A: are present
or B: are absent
- 362. A.P.G. in a setting of public gatherings
A: are present
or B: are absent
- 363. A.P.G. in a leisure setting A: are present
or B: are absent
- 364. Time spent in A.P.G. activity A: is high
or B: is low
- 365. Time spent in A.P.G. activity A: is high
or high-medium
or B: is low-medium or low
- B. Dissociation of the Sexes at Adolescence
(D. of S. = Dissociation of Sexes)
- 366. D. of S. at adolescence A: is high
or B: is medium or low
- 367. D. of S. at adolescence A: is high or medium
or B: is low
- 368. Excluded
- 369. Either high D. of S. at adolescence or
customs of initiation at adolescence
A: are present
or B: are absent
- 370. Segregation of adolescent boys A: is
complete or partial
or B: is absent
- 371. A: adolescent boys are segregated and
reside with a group of peers
or B: remaining substantively coded
cultures
- C. Male Initiation Rites and Genital Mutilation
- 372. Male initiation rites A: are present
or B: are absent
- 373. Male initiation ceremonies at puberty
A: are present
or B: are absent
- 374. Male puberty rites A: are present
or B: are absent
- 375. Important secrets associated with male
initiation rites A: are present
or B: are absent
- 376. Ordeals of considerable severity associated
with male initiation rites A: are present
or B: are absent

- 377. Male genital mutilation A: is present
or B: is absent
- 378. Male genital mutilation, if present A:
occurs in late childhood or corlier
or B: occurs in adolescence or later
- 379. Severe genital operations associated with
male initiation rites A: are present
or B: are absent

D. Female Initiation Rites

- 380. Segregation of girls at menarche A: is
present
or B: is absent
- 381. Excluded
- 382. Female initiation rites A: are present
or B: are absent
- 383. Female initiation rites, if present A:
are not painful
or B: are painful
- 384. Excluded

XXXVI. Sexual Behavior

- 385. Sexual expression by the young A: is
restricted
or B: is semi-restricted or permitted
- 386. Sexual expression by the young A: is
restricted or semi-restricted
or B: is permitted
- 387. Premarital coitus A: is forbidden
or B: is not forbidden
- 388. Premarital coitus A: is present
or B: is absent or rare
- 389. Premarital sex relations A: are strongly
punished and infact rare
or B: are freely permitted
- 390. P.S.R. A: are strongly punished and in
fact rare
or B: are weakly punished and in fact
not rare, or punished only if pregnancy
results, or freely permitted
- 391. P.S.R. A: are strongly punished and in fact
rare, or weakly punished and infact not
rare
or B: punished only if pregnancy results
or freely permitted

- 392. P.S.R. A: are strongly punished and
in fact rare, or weakly punished and
in fact not rare or punished only if
pregnancy results
or B: are freely permitted
- 393. Extra marital coitus is A: punished
or B: permitted
- 394. E.C. A: is present
or B: is absent
- 395. Belief in the uncleanness of women A:
is present
or B: is absent
- 396. Strength of menstrual taboo is A: high
or B: low
- 397. Sex disability A: is present
or B: is absent
- 398. Intensity of sex anxiety A: is high
or B: is low
- 399. Intensity of castration anxiety A:
is high
or B: is low
- 400. Homosexual activity on the part of either
sex A: is prohibited
or B: is permitted
- 401. Incidence of V.D. disease A: is high
or B: is low

XXXVII. Illness and Therapy

- A. Explanations of Illness (Ex. of I. = Explanations
of Illness)
- 402. Ex. of I. of an oral nature A: are
present (e.g. indigestion, verbal
spells, etc.)
or B: are absent
- 403. Ex. of I. of an anal nature A: are
present (e.g. feces, use of charms,
curses in ritual)
or B: are absent
- 404. Ex. of I. of a sexual nature A: are
present
or B: are absent
- 405. Ex. of I. of a dependence nature A: are
present (soul loss, spirit possession)
or B: are absent

406. Ex. of I. of an aggression nature A: are present
or B: are absent
- B. Performance Therapies (P.T. = Performance Therapies)
407. P.T. of an oral nature A: are present
(swallowing something)
or B: are absent
408. P.T. of an anal nature A: are present
or B: are absent
409. P.T. of a dependence nature A: are present (prayer)
or B: are absent
410. P.T. of an aggression nature A: are present (destruction)
or B: are absent
- C. Avoidance Therapies (A.T. = Avoidance Therapies)
411. A.T. of an oral nature A: are present
(spitting, food taboos)
or B: are absent
412. A.T. of an anal nature A: are present
(retention of feces, washing)
or B: are absent
413. A.T. of a sexual nature A: are present
or B: are absent
414. A.T. of a dependence nature A: are present (isolating patient)
or B: are absent
415. A.T. of an aggression nature A: are present (sacrifice of property)
or B: are absent

XXXVIII. Aggression and Warfare

416. Threat of armed attack by alien societies
is A: considerable
or B: limited or negligible
417. Warfare is A: prevalent
or B: not prevalent
418. Warfare is A: common or chronic
or B: rare or infrequent
419. Military glory is A: strongly or moderately emphasized
or B: negligibly emphasized

- 420. Bellicosity is A: extreme
or B: moderate or negligible
- 421. Killing, torturing or mutilating of the
enemy is A: strongly or moderately
emphasized
or B: moderate or negligible
- 422. Cannibalism is A: present
or B: unimportant or absent

XXXIX. Religion, Magic and Eschatology

- 423. Organized priesthood is A: present
or B: unimportant or absent
- 424. Religious specialists are A: full-time
or B: are part time
- 425. Supernaturals are A: mainly benevolent
or B: mainly aggressive
- 426. High god A: is present
or B: is absent
- 427. High god, if present, is A: active
or B: inactive
- 428. High god, if present and active A: supports
human mortality
or B: does not support human mortality
- 429. Supernatural sanctions for morality A: are
present
or B: are absent or unreported
- 430. Supernatural sanctions for mortality, having
an effect on an individuals health A:
are present
or B: are absent or unreported
- 431. Supernatural sanctions for morality, having
an effect on an individual afterlife
or B: are absent or unreported
- 432. Attractive afterlife is A: believed in
or B: not believed
- 433. Belief in reincarnation A: is present
or B: is absent
- 434. Asceticism in mourning behavior A: is high
or B: is low
- 435. Abandonment of the house of the dead A: is
practiced
or B: is not practiced

- 436. Active ancestral spirits A: are present
or B: are absent
- 437. Fear of ghosts, spirits, humans or animals
A: is high
or B: is low
- 438. A: other-worldly fears of ghosts or spirits
are greater than this--worldly fears of
humans or animals
or B: fears this--worldly humans or animals
is greater
- 439. Fear of ghosts A: is high
or B: is low
- 440. Fear of spirits A: is high
or B: is low
- 441. Fear of human beings A: is high
or B: is low
- 442. Fear of animal spirits A: is high
or B: is low
- 443. Overall fear of others A: is high
or B: is low
- 444. Use of dreams to seek and control supernatural
powers A: is high
or B: is low
- 445. Sorcery A: is important
or B: is unimportant
- 446. Witchcraft A: is significantly present
or B: is moderately present or absent
- 447. Love magic A: is present
or B: is absent
- 448. Observation of food taboos A: is high
or B: is low
- 449. Observation of food taboos A: is high
or B: is medium or low
- 450. Observation of food taboos A: is high
or medium
or B: is low
- 451. Totemism A: is present
or B: is unimportant or absent
- 452. Totemism with food taboos A: is present
or B: is absent
- 453. A: Role of religious experts is conducive to
the individuals need to achieve
or B: this role is not conducive to such
development

- 454. Objective of the individuals contact with the divine A: is conducive to the development of the individual's need to achieve
or B: not conducive
- 455. Mode of the individual's contact with the divine is A: conducive to the development of the individual's need to achieve
or B: not conducive
- 456. Internalization of the individual's contact with the divine is A: conducive to the development of the individual's need to achieve
or B: not conducive

XXXX. Games

- 457. A: games of some kind are present
or B: no games
- 458. Games, if present A: include games of strategy
or B: do not include games of strategy
- 459. Games, if present A: include games of chance
or B: no games of this kind
- 460. Games, if present A: are limited to games of skill only
or B: are not limited to games of skill only
- 461. A: games of strategy, rather than chance are present
or B: chances, rather than strategy are present
- 462. A: games of strategy, chance, and skill--rather than skill only--are present
or B: games of skill only present
- 463. A: games of strategy, chance and skill--rather than strategy and skill only--are present
or B: games of strategy and skill only are present
- 464. A: games of strategy, chance and skill--rather than chance and skill only--are present
or B: games of chance and skill only are present
- 465. A: games of strategy, chance and skill--rather than no games at all--are present
or B: no games at all

466. If games are present, but games of strategy absent, games A: include those of both chance and skill, rather than skill only or B: skill only

XXXXI. Culture Contact and Culture Change

467. Contact with other cultures A: is frequent or B: is irregular
468. Contact with other cultures A: is frequent or B: is regular or irregular
469. Contact with other cultures A: is frequent or regular or B: is irregular
470. Innovations are A: generally accepted or B: accepted only selectively

XXXXII. Miscellaneous

471. Secret societies are A: present or B: unimportant or absent
472. Composite narcissism index A: is high or B: is low
473. Sensitivity to insult A: is extreme or B: is moderate or negligible
474. Boastfulness A: is extreme or B: is moderate, negligible or unreported
475. Exhibitionistic dancing A: is strongly or moderately emphasized or B: is negligibly emphasized
476. Degree of insobriety A: is strong or B: is moderate or slight
477. Alcoholic aggression A: is strong or B: is moderate or slight
478. Abandonment or killing of old people A: is present or B: is unimportant or absent
479. Need to achieve, as inferred from folk tables A: is high or B: is low
480. Complexity of artistic design A: is high or B: is low

APPENDIX C

INFORMATION FOR FOURTEEN SELECTED AFRICAN
SOCIETIES ON THE TEXTOR ITEMS USED
IN THE STUDY

Society	V. Diet					A	B	VI. Subsistence					F	VII. Technology					VIII. Writing System					IX. Demography																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	8	9	0	1	2			3	4	5	6	7		8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5

Society	X. Political Organization					XI. Societal Complexity										XII. Stratification										XIII. Work Organization					
	A	B	C	D	E	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	
Ashanti	A	A	A	A	A	-	A	-	-	B	A	A	A	A	N	A	-	A	A	B	B	B	B	B	A	B	A	B	B	A	A
Azande	B	A	A	B	N	A	B	-	-	B	A	A	B	A	N	A	A	A	A	B	B	B	B	B	A	B	A	A	B	A	B
Chagga	B	B	A	A	B	N	A	A	-	B	B	A	B	B	N	A	-	A	A	B	B	B	B	A	B	B	B	A	A	A	A
Fon	A	A	A	A	B	N	A	-	A	-	A	A	B	A	N	A	-	A	A	B	B	B	B	A	B	A	B	A	B	A	B
Ganda	A	A	A	A	A	B	-	-	-	A	A	A	B	B	N	A	A	A	A	B	B	B	B	A	B	A	-	-	-	-	-
Lamba	B	B	A	A	B	N	B	-	-	A	B	A	A	B	B	N	A	-	B	B	B	N	N	N	B	A	-	-	-	-	-
Masai	N	N	N	N	N	N	-	-	-	B	A	A	B	B	N	A	-	B	B	B	B	N	N	N	A	B	-	-	-	-	-
Mbundu	B	A	A	A	B	N	A	A	-	B	A	A	B	A	N	A	-	A	A	B	B	B	B	A	B	A	B	B	A	A	A
Nuer	N	N	N	N	N	N	N	-	A	-	B	B	B	B	A	A	B	B	B	B	B	N	N	N	A	B	B	B	B	A	A
Nyakyusa	B	B	A	A	A	A	-	-	-	B	A	A	B	B	N	A	B	B	B	B	B	N	N	N	B	A	-	-	-	-	-
Tallensi	B	B	B	A	A	B	-	-	-	B	B	B	A	A	A	A	B	A	B	A	B	A	B	B	B	A	B	A	B	A	B
Thonga	B	A	A	A	B	N	A	B	-	B	A	A	B	A	N	A	-	A	A	B	B	B	B	A	B	B	B	B	A	A	A
Tiv	B	B	A	A	N	N	N	-	-	B	B	A	A	A	N	A	B	B	B	B	B	N	N	N	B	A	A	A	A	A	A
Venda	-	-	-	-	B	N	A	A	-	B	A	A	B	A	N	A	-	A	A	B	B	B	B	A	B	A	-	-	-	-	-

[illegible]

[illegible]

Society	XXV. Family Organization					XXVI. Polygyny					XXVII. Authority Within the Family					XXVIII. Avoidances					XXIX. Mode of Marriage																	
	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271		
Ashanti	A	L	A	B	B	A	A	L	B	B	B	B	A	A	N	N	N	N	D	-	A	B	B	A	D	-	B	A	A	A	B	A	B	A	B	B	B	
Azande	B	B	B	E	N	N	A	A	B	B	B	B	A	N	A	N	N	B	-	B	A	-	-	-	-	B	B	A	A	A	B	A	B	A	D	B	B	
Chaga	B	B	B	B	N	N	A	-	B	B	B	A	N	A	N	N	B	-	-	-	-	-	-	-	-	-	B	A	A	A	B	A	B	A	B	B	B	
Fon	B	B	B	B	N	N	A	A	B	B	B	A	N	A	A	N	N	B	A	-	-	-	-	-	-	B	A	B	A	A	B	A	B	A	B	B	B	
Ganda	B	B	B	B	N	N	A	A	B	B	B	A	N	A	A	N	N	B	-	-	-	-	-	-	-	A	-	B	A	A	B	A	B	A	B	B	B	
Lamba	B	B	B	B	N	N	A	B	-	B	-	-	A	-	A	N	D	-	-	-	-	-	-	-	-	A	-	A	A	B	A	B	B	N	B	B	B	
Massai	B	B	B	B	N	N	A	-	B	B	B	A	N	A	A	N	N	B	-	-	-	-	-	-	-	-	B	A	A	B	A	B	A	B	B	B	B	
Mbumdu	B	B	B	B	N	N	A	-	B	B	B	A	N	A	N	N	N	B	-	-	-	-	-	-	-	-	-	-	A	A	B	A	B	A	B	B	B	
Nuer	A	B	A	E	B	A	A	A	B	B	B	B	A	N	A	N	N	D	-	-	-	-	-	-	-	A	B	-	A	A	B	A	B	A	B	B	B	
Nyakyusa	B	B	B	B	N	N	A	A	B	B	B	A	N	A	A	N	N	B	-	B	A	-	B	A	-	A	-	B	A	A	A	B	A	B	A	B	B	B
Tallensi	A	B	A	B	B	A	A	A	B	B	B	B	A	N	A	N	N	D	-	A	A	-	B	B	B	B	A	A	A	B	A	B	A	B	B	B	B	B
Thonga	A	A	B	B	A	A	A	A	A	B	B	B	A	N	A	N	N	B	A	-	-	-	-	-	-	A	B	B	A	A	B	A	B	A	B	B	B	B
Tiv	A	A	B	B	A	A	A	A	B	B	B	B	A	N	A	N	N	D	-	-	-	-	-	-	-	A	B	B	A	A	B	B	N	B	N	A	B	B
Venda	A	A	B	B	A	A	A	A	A	B	B	B	A	N	A	N	N	D	A	-	-	-	-	-	-	-	A	B	A	A	B	A	B	A	B	A	B	B

Society	XXX. Divorce			XXXI. Status of Women			XXXII. Fertility			XXXIII. Pregnancy and Childbirth																					
	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	
Ashanti	-	-	-	-	-	B	A	B	A	A	A	A	-	A	B	A	B	B	A	-	E	B	B	B	A	B	B	B	B	B	
Azande	B	B	B	N	N	-	-	-	-	-	A	A	A	B	B	-	-	-	-	A	B	B	A	A	A	A	A	A	A	A	
Chagga	-	-	-	-	-	-	-	-	-	-	A	A	-	A	A	-	-	-	-	-	A	A	A	B	A	-	-	B	B	A	
Fon	-	-	-	-	-	-	-	A	-	-	A	A	-	A	B	-	-	-	-	-	B	A	B	A	A	-	N	B	A	A	
Ganda	-	-	-	-	-	-	-	-	B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	A	A	
Lamba	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	B	
Masai	-	-	-	-	-	-	-	-	A	-	A	A	A	B	B	A	A	-	-	-	B	B	B	A	A	B	N	B	A	A	
Mbundu	B	B	N	N	N	-	-	-	B	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	B	-	-	-	
Nuer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	A	A	
Nyakyusa	B	B	B	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tallensi	-	-	-	-	-	-	-	-	A	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	A	A	A
Thonga	-	-	-	-	-	-	-	-	A	-	A	A	B	A	-	-	-	-	A	A	B	A	B	-	B	A	N	B	B	A	
Tiv	-	-	-	-	-	-	-	-	-	-	B	-	B	A	B	-	-	-	B	A	A	A	A	-	-	-	-	A	A	A	A
Venda	-	-	-	-	-	-	-	-	-	-	A	B	-	B	A	D	-	A	A	B	A	A	A	A	-	A	-	-	-	-	-

XXIV. Infancy and Childhood

Society	A	B	C	D	E	F	
Aschanti	302	303	304	305	306	307	308
Asande	308	309	310	311	312	313	314
Chagga	314	315	316	317	318	319	320
Fon	321	322	323	324	325	326	327
Ganda	328	329	330	331	332	333	334
Laria	335	336	337	338	339	340	341
Masai	342	343	344	345	346	347	348
Mundu	349	350	351	352	353	354	355
Nar	356	357	358	359	360	361	362
Nyakyusa	363	364	365	366	367	368	369
Tallensi	370	371	372	373	374	375	376
Thonga	377	378	379	380	381	382	383
Tiv	384	385	386	387	388	389	390
Venda	391	392	393	394	395	396	397

Society	XXXVII. Sexual Behavior										XXXVII. Illness and Therapy					XXXVIII. Aggression and Warfare																								
	385	386	387	388	389	390	391	392	393	395	396	397	398	399	400	401	402	403	404	405	A	406	407	408	409	410	C	411	412	413	414	415	416	417	418	419	420	421	422	
Ashanti	A	A	A	B	A	A	A	A	A	A	A	-	A	A	-	A	B	A	B	B	B	B	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	A	A	B
Azande	B	A	-	-	N	B	B	A	A	-	B	B	A	A	B	-	B	B	A	A	A	A	A	A	A	A	A	A	B	A	B	A	B	A	-	A	A	A	-	
Chaga	A	A	-	-	N	B	A	A	A	-	-	-	-	A	-	-	A	B	B	D	A	B	A	A	B	A	A	A	B	B	A	-	-	-	A	-	B	-		
Fon	A	A	-	A	-	A	A	A	A	-	A	-	A	A	B	-	A	B	A	B	B	A	B	A	A	A	A	A	B	A	-	A	-	A	A	A	-	-	-	
Ganda	B	A	-	N	B	A	A	A	-	A	A	-	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	A	A	B	-	
Lamba	A	A	-	-	-	-	-	-	A	-	A	A	A	-	A	A	A	A	A	A	A	A	A	B	B	A	A	B	A	A	-	-	-	B	-	-	-	-	-	
Massai	A	A	B	A	B	B	B	B	B	A	-	B	B	B	-	A	A	B	A	B	B	B	A	B	B	A	B	B	A	B	A	B	-	-	-	A	A	A	-	
Nbundu	B	A	B	-	-	-	-	-	B	A	-	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nuer	-	-	-	-	-	-	-	-	-	B	A	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	A	A	B	-		
Nyakusa	-	-	-	N	N	N	N	N	-	-	B	A	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	A	A	B	-		
Tallensi	-	-	-	-	N	B	B	A	-	-	B	B	-	B	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	B	B	B	-		
Thonga	A	A	B	A	B	B	B	B	A	B	-	B	B	A	B	-	A	B	B	A	B	A	A	B	A	A	A	B	B	-	-	-	-	-	-	A	A	A	-	
Tiv	-	-	A	B	N	B	B	A	A	-	A	A	-	A	-	-	A	A	B	A	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	B	A	-	
Venda	B	A	B	A	N	B	B	A	A	-	-	B	-	-	-	-	B	B	B	A	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	A	-

XXXXIX. Religion, Magic and Eschatology

[illegible]

Society	XXXX. Games				XXXX. Culture Contact and Cultural Change				XXXXII. Miscellaneous															
	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
Ashanti	A	A	B	B	A	N	B	N	N	N	-	-	-	-	A	A	A	A	A	B	B	-	B	B
Azande	A	A	A	B	?	A	A	A	A	N	N	B	A	B	-	A	A	A	A	B	B	-	A	-
Chagga	A	A	A	B	?	A	A	A	A	N	N	B	A	B	-	A	A	B	A	B	B	-	B	-
Fon	A	A	A	B	?	A	A	A	A	N	-	-	-	-	B	A	B	A	B	-	-	-	A	-
Ganda	A	A	B	B	A	N	-	N	N	N	-	-	-	-	-	A	B	B	A	-	-	-	-	-
Lamba	A	A	B	B	A	N	B	N	N	N	-	-	-	-	-	-	-	-	-	B	-	-	-	-
Masai	A	A	B	B	A	N	B	N	N	N	-	-	-	-	-	A	A	A	B	A	-	-	A	B
Mbundu	A	A	B	B	A	N	B	N	N	N	A	A	A	B	-	-	-	-	-	B	-	-	A	-
Nuer	-	-	-	-	-	-	-	-	-	-	B	B	B	B	-	A	A	B	B	-	-	-	-	-
Nyakyusa	A	A	B	B	A	N	B	N	N	N	-	-	-	-	-	A	A	-	A	-	-	-	-	-
Tallensi	A	B	A	B	B	N	N	B	N	A	N	B	A	B	-	B	B	A	A	-	-	-	-	-
Thonga	A	A	A	B	?	A	A	A	A	N	A	A	A	A	-	A	B	A	A	A	A	-	B	B
Tiv	A	A	B	B	A	N	B	N	N	N	A	A	A	A	-	A	B	A	A	B	-	-	-	-
Venda	A	A	A	B	?	A	A	A	A	N	-	-	-	-	-	B	B	B	A	B	B	-	A	-

APPENDIX D

ITEMS DESIGNATED AS MANIFESTATIONS OF THE COGNITIVE
STYLE DESCRIBED BY WITKIN

APPENDIX D.--Items Designated as Manifestations of the Cognitive Style Described by Witkin According to the Descriptive Composite of Chapter III.

Items from Textor	Category or sub-category of descriptive composite that matches content of the item	Designation of part A as to global-articulated dimension in descriptive composite	Designation of part B as to global-articulated dimension in descriptive composite
#44 Cultures where settlements are A: fixed or B: non-fixed	Nature of the Ecology	Global Homogeneous	Articulated Varigated
#46 Cultures where settlements are A: non-fixed and movement is nomadic or B: other than the above	Nature of the Ecology	Articulated Global Societies	Global Stable Societies
#47 Cultures where, if settlements are non-fixed A: movement is nomadic or B: movement is non nomadic	Nature of the Ecology	Articulated Mobile Societies	Global Stable Societies
#51 Cultures where subsistence is primarily by A: food production or B: food gathering	Nature of the Ecology	Global Stable Societies	Articulated Mobile Societies
#61 Cultures where subsistence is primarily by A: animal husbandry or B) remaining cultures	Nature of the Ecology	Articulated Mobile Societies	Global Stable Societies
#62 Cultures where husbandry of some kind is A: present or B: absent	Nature of the Ecology	Articulated Mobile Societies	Global Stable Societies
#78 Cultures where the writing system is A: either alphabetic or phonetic or mnemonic or B: absent	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#79 Cultures where a city is A: present or B: absent	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#80 Cultures where a city or town is A: present or B: absent	Nature of the Ecology	Articulated Varigated	Global Homogeneous

APPENDIX D.--Continued.

Items from Textor	Category or sub-category of descriptive composite that contains the item	Designation of part A as to global-articulated descriptive composite	Designation of part B as to global-articulated descriptive composite
#84 Cultures where the level of political interest is A: high or B: lower than the large state	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#91 Cultures where societal complexity is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#92 Cultures where the index of social development is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#93 Cultures where overall social structure complexity is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#102 Cultures where class stratification is A: present or B: absent	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#117 Cultures where the percentage of occupations that are specialized is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#119 Cultures where the craft specialization score is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#150 Cultures where the differentiation of the juridical agency from all other agencies in the society is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#151 Cultures where the differentiation of the medical agency from all other agencies in the society is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#153 Cultures where the division of labor among juridical specialists and subunits is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#154 Cultures where the division of labor among medical specialists and subunits is A: high or B: low	Nature of the Ecology	Articulated Varigated	Global Homogeneous
#175 Cultures where the community is A: "kin-homogeneous" or B: "kin-heterogeneous"	Nature of the Ecology	Global Homogeneous	Articulated Varigated
#177 Cultures where the community is A: single clan community and exogenous or B: not these	Nature of the Ecology	Global Homogeneous	Articulated Varigated
#277 Cultures where the status of women is A: inferior or subjected or B: not strongly inferior or subjected	Personal Characteristic of Mother	Global Small Interaction	Articulated Variety of Interaction
#294 Cultures where practices to protect the newborn child from harmful influences are A: present or B: absent	Physical care of Child	Global Special Protection	Articulated No Special Protection

TABLE 2. A--B--C--D--E--F--G--H--I--J--K--L--M--N--O--P--Q--R--S--T--U--V--W--X--Y--Z--

Page from Textor	Category or sub-category of descriptive composite that matches content of the item	Physical care of Child	Designation of part A as to global-articulated dimension in descriptive composite	Designation of part B as to global-articulated dimension in descriptive composite
#302 Cultures where the average early satisfaction potential is A: high or B: low			Global Indulgent & Frequent	Articulated Not Indulgent & Frequent
#308 Cultures where average socialization anxiety is A: high or B: low	Development of Controls		Global Social Standard	Articulated Own Experience Standard
#315 Cultures where mother and nursing child customarily sleep A: in the same bed or B: in different beds	Amount and Nature of Body Contact		Global Frequent & Prolonged	Articulated to Fulfill Bodily Needs
#316 Cultures where exclusive mother-son sleeping arrangements A: last one year or longer or B: last less than one year	Amount and Nature of Body Contact		Global Frequent & Restrictive	Articulated Strong Ties & Not Restrictive
#317 Cultures where display of affection toward the infant--fondling, caressing, playing with him--is A: high or B: low	Physical Care of Child		Global Indulgent & Frequent	Articulated Not Indulgent
#318 Cultures where the overall indulgence of the infant is A: high or B: low	Physical Care of Child		Global Indulgent & Frequent	Articulated Not Indulgent
#319 Cultures where the protection of the infant from environmental discomforts is A: high or B: low	Physical Care of Child		Global Special Protection	Articulated No Special Protection
#320 Cultures where the degree of drive reduction--e.g. hunger, thirst and unidentified discomforts is A: high or B: low	Physical Care of Child		Global Indulgent & Frequent	Articulated Not Indulgent
#321 Cultures where the immediacy--i.e. the speed--of reduction of the infant's drive is A: high or B: low	Physical Care of Child		Global Indulgent & Frequent	Articulated Not Indulgent
#322 Cultures where the consistency of reduction of the infant's drives is A: high or B: low	Physical Care of Child		Global Indulgent & Frequent	Articulated Not Indulgent
#323 Cultures where the constancy of presence of the infant's nurturant agent is A: high or B: low	Amount and Nature of Body Contact		Global Frequent & Prolonged	Articulated Fulfilled Bodily Needs
#325 Cultures where the degree of diffusion among the infant's nurturant agents is A: high or B: low	Amount and Nature of Body Contact		Articulated Diffusion of Mother	Global Mother only
#327 Cultures where the age of the infant at time of reduced contact with the mother is A: higher than two years or B: two years or lower	Amount and Nature of Body Contact		Global Frequent & Prolonged	Articulated Fulfill Bodily Needs
#329 Cultures where the age at which the infant is A: two years or higher or B: two years or lower	Development of Controls		Global Social Standard	Articulated Experience Standard

APPENDIX A--continued

Items from text	Category or sub-category of descriptive composite that matches content of the item	Designation of part A as to global-articulated dimension in descriptive composite	Designation of part B as to global-articulated dimension in descriptive composite
#331 Cultures where the age at beginning of independence training is A: 3.8 years or higher or B: lower than 3.8 years	Development of Controls	Global Social Standard	Articulated Experience Standard
#334 Cultures where the indulgence of the child is A: high or B: low	Physical Care of Child	Global Indulgent & Frequent	Articulated Not Indulgent
#336 Cultures where the total positive pressure toward developing responsible behavior in the child is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#337 Cultures where the child's inferred anxiety over non performance of responsible behavior is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#340 Cultures where the total positive pressure toward developing nurturant behavior in the child is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#341 Cultures where the child's inferred anxiety over non performance of nurturant behavior is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#344 Cultures where the total positive pressure toward developing self-reliant behavior in the child is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#345 Cultures where the child's inferred anxiety over non performance of self-reliant is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#348 Cultures where the total positive pressure toward developing achievement behavior in the child is A: high or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard
#349 Cultures where the child's inferred anxiety over non performance of achievement behavior is A: high or B: low	Development of Controls	Global Social Standard	Articulated Experience Standard
#419 Cultures where military glory is A: strongly or moderately emphasized or B: negligibly emphasized	Development of Controls	Articulated Experience Standard	Global Social Standard
#468 Cultures where contact with other cultures is A: frequent or B: regular or irregular	Nature of the Ecology	Articulated Variegated	Global Homogeneous
#470 Cultures where innovations are A: generally accepted or B: accepted only selectively	Nature of the Ecology	Articulated Variegated	Global Homogeneous
#479 Cultures where the need to achieve is A: inferred from folk tales, or B: low	Development of Controls	Articulated Experience Standard	Global Social Standard

APPENDIX E

INFORMATION AVAILABLE FOR THE SELECTED FOURTEEN
AFRICAN SOCIETIES

APPENDIX F

SAMPLE PROBLEM AND

CRITERION TEST

Sample Problem

Item		Cog. Style	Artic.	Global
#147	Codified laws are (A) present or (B) unimportant or absent	No		
#460	Games, if present, are (A) limited to games of skill only or (B) not limited to games or skill only	No		
#465	(A) games of strategy, chance and skill--rather than strategy and skill only are present or (B) games of strategy and skill only are present	No		
#414	Avoidance therapies of an anal nature are (A) present or (B) absent	No		
#307	Early aggression satisfaction is (A) high or (B) low	No		
#344	Total positive pressure toward developing self-reliant behavior is (A) high or (B) low	Yes	A	B
#348	Total positive pressure toward developing self-reliant behavior is (A) high or (B) low	Yes	A	B
#167	Juridical solution is based on the clients action to (A) a high extent or (B) a low extent	No		
#347	Child's inferred conflict regarding self-reliant behavior is (A) high or (B) low	No		
# 80	City or town is (A) present or (B) absent	Yes	A	B
#351	Child's inferred anxiety regarding achievement behavior is (a) high or (B) low	No		

	Item	Cog. Style Artic. Global
#439	Fear of ghosts is (A) high or (B) low	No
# 36	Natural environment is (A) very harsh (desert, desert grasses and shrubs) or (B) not very harsh	No
#104	Class stratification present and (A) based on wealth or occupational status or (B) not based on these	No
#247	Family is (A) independent and marriage is commonly polygynous and not preferentially sororal and co-wives dwell together or (B) not these	No
#238	Family is (A) of the small extended type or (B) not of the small extended type	No
#285	Sex taboo during pregnancy is (A) present or (B) absent	No
#325	Degree of diffusion among the infant's nurturant agent is (A) high or (B) low	Yes A B
#334	Indulgence of the child is (A) high or (B) low	Yes B A
#242	Marriage is (A) commonly or occasionally polygynous or (B) monogamous	No

Criterion Test

Item	Cog.	Style	Artic.	Global
1. Plow is (A) present or (B) absent	No			
2. Composite narcissism index is (A) high or (B) low	No			
3. High god, if present and active (A) supports human morality or (B) doesn't support	No			
4. Exclusive mother-son sleeping arrangements last (A) 1 year or longer or (B) less than 1 year	Yes		B	A
5. Where the latitude is (A) 10° or greater or (B) less than 10°	No			
6. Premarital sex relations are (A) strongly punished and in fact rare or (B) freely permitted	No			
7. Societal complexity is (A) high or (B) low	Yes		A	B
8. Age of the infant at time of reduced contact with the mother is (A) higher than 2 yrs. or (B) 2 yrs. or lower	Yes		B	A
9. Female marriage occurs (A) at or before puberty or (B) after puberty	No			
10. Level of social sanction is (A) the public corporeal sanction or (B) private settlement	No			
11. Average early satisfaction potential is (A) high or (B) low	Yes		B	A
12. Juridical clients comments are disregarded or used against him to (A) high extent or (B) low extent	No			

Item	Cog.	Style	Artic.	Global
13. Subsistence primarily by agriculture, work mainly done by (A) males or (B) females	No			
14. Dissociation of Sexes at adolescence is (A) high or (B) medium or low	No			
15. Contact with other cultures is (A) frequent or (B) regular or irregular	Yes	A	B	

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