THE ACHIEVEMENT MOTIVE AMONG THE CHAGGA OF TANZANIA

A Dissertation

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SUMMARY

This dissertation examines the achievement motive among the Chagga in order to explain their economic success, attained during the past sixty years amid general Tanzanian poverty. Since it was impossible to examine the first Chagga coffee growers, psychological tests were employed to ascertain levels of achievement motivation among present Chagga secondary school students and farmers, with Bondei and Hindu Asian students serving as control groups. The psychological techniques included McClelland's Thematic Apperception Test, Knapp's Color Preference and Time Metaphor Tests, Aronson's Graphic Expression Test, Morris' Value Scale, and the Sentence Completion Test for Achievement Motivation Measurement among Farmers. Actual economic and scholastic achievements by the same subjects were also investigated in order to examine the validity of the psychological tests and to provide insight into the reasons for Chagga success in coffee growing.

No statistically significant differences were found to distinguish any one group from the others. This lack of observed psychological differences between Chagga and less achievement-proven Bondei subjects led to an examination of historical and ecological reasons for the unique Chagga achievements.

Principal conclusions are (1) hypotheses dependent on any single variable (psychological, economic, ecological, historical, etc.) prove difficult to substantiate because of the multivariance inherent in the process of economic development, and (2) although the achievement motive does not seem to have been associated with past Chagga success, the psychological commitment which it requires may be necessary for future Tanzanian development, and serious problems are foreseen if the Tanzanian government does not provide communication structures that can foster commitment to economic change.

ACKNOWLEDGMENTS

In the course of this research, debts to Tanzanian institutions and individuals were incurred that can never be fully repaid. The Ministry of Education and the University College, Dar es Salaam, provided essential connections and material aid. The Ministry of Commerce and Co-operatives and the Kilimanjaro Native Co-operative Union, Ltd. (especially Philip Tesha, General Manager, and Charles Mbuya, Co-operative Inspector), also provided crucial backing. Many of my colleagues at the University College contributed valuable advice, especially I. N. Resnick and E. L. Klingelhofer, who painstakingly criticized and helped to formulate my ideas. Augustine E. Assey, a student at the College, devoted his vacation to interviewing.

In the United States, William J. Foltz and L. W. Doob patiently tested my ideas and approach from the inception of the project, and without the financial assistance of the Yale Graduate School Council on International Relations, the field research and writing could not have been completed.

While credit for the merits of this dissertation must be shared with the above, as well as with my wife who assisted at many tasks, deficiencies remain for which I, alone, am to blame.

J. M. O.

New Haven, Connecticut
June, 1967

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I

INTRODUCTION

"The Development Plan now before this House," the President said in May, 1964, "is as vital to the future of this Union as the attainment of independence itself." Freedom had been won, and the most important matter then before the nation was the creation of a new life built by "a healthy, educated, and prosperous people."

As they thumbed through the Plan, the assembled MP's of Tanzania must have been impressed. Annual per capita income was to rise to £45. There would be Africanization of managerial and professional skills, and an average life span of 50 years. . . . As President Nyerere continued his speech, many of the Members marvelled at the Plan's organization of knowledge and technical completeness. But the Parliamentarians were not to be complacent, or to think that the Plan by itself would develop their Country. The President cautioned them: "There is one thing which this Plan is not. It is not a substitute for work. On the contrary, it is a call for work. By itself this Plan is worth no more than the paper it is written on. It is our work, our effort, which will trans-

form it into something of value to our nation."[1]

Admissions like these are being made in many countries today. Only the people of a nation can bring change. Planning may help, and some see it as "clearly the most effective method of achieving the desired result." Usually, these same people will admit that the success of the Plan "depends largely if not entirely upon the self-discipline and effort of our people."[2] People's attitudes and actions must become more conducive to economic change before development will become autonomous.

President Nyerere's advisors were competent in the technical aspects of planning and plan implementation. But in specific instances they could not say precisely how people would react to development schemes that were intended to disrupt traditional ways of life. Nor were the planners certain what incentives people would require; what would be necessary to stimulate them to greater effort.

A. The Purpose of This Study

Obviously, in Tanzania as in most of the new nations, economic development is crucial to the maintenance of peaceful social change and political stability.[3] The Chagga of

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[1]Pres. J. K. Nyerere, "The Five Year Development Plan for Tanganyika" (Address to Parliament, Dar es Salaam: May 12, 1964).

[2]United Republic of Tanganyika and Zanzibar, Tanganyika Five-Year Plan For Economic and Social Development (Dar es Salaam, 1964), vol. I, pp. 1-4.

[3]In April, 1964, Tanganyika was united with Zanzibar, becoming 'Tanzania' in 1965. 'Tanzania' is used in this

Kilimanjaro are a rare example of indigenous economic growth in that country. The theory of achievement motivation offers a possible explanation of their accomplishment as well as suggested stimuli for future nation-wide development.

In this study I have examined the importance of achievement motivation in explaining the relatively high levels of economic development among the Chagga. My interest in this question rested on the assumption that cases of past economic success may be instructive for future Tanzanian development. I have tried to determine whether special psychological content can be identified in connection with the successful cases of development; whether those cases are characterized by (1) deep-seated drives toward true entrepreneurship, (2) weaker but still identifiable personality configurations dominated by achievement motivation, or (3) a capacity for adaptive response that is not psychologically perceptible through existing motivation testing techniques. I have adopted available methods to African conditions by employing psychological tests based on the analysis of achievement motivation developed by David McClelland and his associates.[4] The tests examine:

1. Frequency of achievement imagery in Thematic Apperception stories.
2. Preference for somber, environmental colors and rapid time images.

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study to refer to events since the Union was formed, or to future development.

[4] D. C. McClelland, J. W. Atkinson, and E. X. L. Lowell, The Achievement Motive (New York, 1953), and D. C. McClelland, The Achieving Society (New York, 1961).

3. Purposiveness, efficiency and space employment in creating doodles.

Chagga attitudes have also been measured and compared, along with performance on the achievement motivation tests, to actual individual or group economic achievement in order to determine differences between levels of achievement motive and real economic success in Tanganyika.

I have examined only a few of the human factors in the process of economic development. Other detailed studies of the psychological dimension, coupled with medical, social, political and related areas, may someday contribute to a general theory of the human factors in development which will be useful to planners as it is intellectually satisfying. But until this empirical knowledge exists in depth, no comprehensive theory that is also cross-culturally valid is likely to contribute much of practical value. Meanwhile, explanatory theories, such as McClelland's "achievement motivation," are emerging, and need to be tested.

B. Definitions

The achievement motive is an enduring characteristic of personality which, combined in varying proportions with other needs such as power and affiliation, produces an individual's overall motivational configuration.[5] It is typified

[5]Motivation is defined by H. A. Murray. "A need is a construct (convenient fiction or hypothetical concept) which stands for a force (the psycho-chemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation, and action in such a way as to transform in a certain direction an exist-

by anxieties about the problems of actual achievement; a "desire" to do something well, concern about possible failure, comparisons with other peoples' performances, activity instrumental to success, awareness of aids and obstacles in the struggle for success, and monopolization of the individual's thought process by permeating it with concern about achievement.[6] Furthermore, achievement motivation is personal and individual, and involves personal concern, commitment or anxiety within the self.

The origins of achievement motivation are not, as yet, entirely clear. While childhood experiences are undoubtedly important in personality formation, features like social class derivation, educational experience, child training techniques, and parent-child relations have been shown to correlate with achievement motivation in western cultures. Causal relationships have not yet been conclusively proven, but, as McClelland has put it, "both behavior theory and psychoanalysis agree that stable personality characteristics like motives are laid down in childhood."[7]

Achievement motivation is expressed by seeking certain

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ing, unsatisfying situation." (Explorations in Personality [New York, 1938], p. 124.) McClelland sees motives as "'affectively toned associative networks' arranged in a hierarchy of strength or importance within a given individual." ("Toward a Theory of Motive Acquisition," American Psychologist, vol. 20 [1965], p. 322.)

[6] J. W. Atkinson, et al., Motives in Fantasy, Action and Society (New York, 1958), Ch. 3.

[7] McClelland, "Toward a Theory of Motive Acquisition," p. 321. See also Atkinson, et al., Motives . . . , Part IV.

types of achievement, such as pride in good work or success in competition with others or with one's own, self-imposed standards. It is emotionally-directed, and, if rewarded, is accompanied by feelings of satisfaction. McClelland's contribution was a cross-cultural method of measuring motivation by studying particular kinds of instrumental activity directed at the attainment of motive-related aims.

> The strength of the motive (its position in the individual's hierarchy of motives) is measured essentially by counting the number of associations belonging to this cluster as compared to others that an individual produces in a given number of opportunities.[8]

The methods depend on projective techniques that have proven capable, under some conditions, of measuring power, affiliation, and sexual motives as well as the need to achieve.

The theory of motivation interests investigators who are concerned with the sources of economic development because of the projected ability to classify personality by exploring the relative strengths of various motives. The true "entrepreneur" is a rare personality type driven by such high ambition that calculated risks are acceptable in pursuit of personal gain. Powerful achievement motivation is a prime contributant to entrepreneurship.[9] However, the rare capitalist entrepreneur is neither historically pertinent nor politically compatible with present Tanzanian socialist devel-

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[8] McClelland, "Toward a Theory of Motive Acquisition," p. 322.

[9] McClelland, "Interest in Risky Occupations among Subjects with High Achievement Motivation," unpublished manuscript (Harvard University, 1956).

opment, as the last chapter of this study will demonstrate. Nevertheless, the psychological origins of entrepreneurship are distinctly relevant to Tanzania if it can be shown that people with high achievement motivation (though not as strong as in the true entrepreneur) are more able to accept and follow up the entrepreneurial lead of others.

Entrepreneurs are at one end of the scale of economic incentive to achieve. Hypothetically, they are driven by their peculiar personality structure to accept challenges at the risk of personal loss. At the other end of the same scale are people who are unwilling to respond even to obvious market possibilities because of traditional values. In between these two extremes lie a range of possible strengths of achievement motivation, including people who are willing to respond to obvious market advantages and make the changes in their lives that are necessary to improve their welfare at little risk to present living standards and social ideals. These people are important in economic change because of their ordinariness: their achievement motivation is not so strong as to discourage the hope that, given a conducive environment, large numbers of people might become more achievement oriented. The nearly 60,000 Chagga who grow coffee are not all "entrepreneurs." Nor, as this research demonstrates, do their motivations significantly differ from a people much less involved with the modern money economy, the Bondei of Tanga Region.

C. Psychological Factors in the Multivariate Context of Economic Development

How are we to account for two groups of people who show disparate levels of economic advance but little difference in motivation? One explanation deals with methods employed to measure motivation, and will be discussed in Chapter III. A second solution is found in the multivariate nature of economic development. This multivariance makes economic development a problem of priorities and scarcities. Achievement motivation should be viewed in relationship to it. The study of personality and motivation may illuminate economic incentives, but those attitudes cannot be understood completely without reference to political stability, ecology, and social system. The efficiency of new capital and improved techniques depends on the variations of all these factors. It is <u>not</u> sufficient to believe that the effects of any of these variables can be isolated and that technical economic planning should carry on from there.[10] In order to

[10]Until quite recently, development economists made few attempts to describe and measure human factors as part of the development process. Their principal targets during the earlier post-war stages of theory construction were the more technical problems of capital formation, such as the proper investment intensity. Until the mid-1950's, the gradual investment approach was emphasized. Then various other approaches emerged as growth failed to materialize generally (Rosenstein-Rodan, Nurkse, Leibenstein, Gershenkron). Others concentrated on the correct balance of investment. To escape from the vicious circle of low productivity-lack of capital-low savings, these theorists asserted that countries aspiring to develop must increase the size of the internal market (Nurkse, Arthur Lewis, and Scitovsky). This balanced growth approach drew attacks from those in favor of strategic investments in key sectors with maximum linkage (Singer, Hirschman, Fleming, Chenery).

The issue in most of these early arguments was whether

make coherent plans for education, resettlement, social changes, manpower planning and other development activity, economists must have basic information about each of these variables that affect economic incentives.[11] Benjamin Higgins states that "the research needed to improve our empirical knowledge of the development process must be interdisciplinary."[12] Others have made similar pleas for research on the human aspects of economic development,[13] and more recently, economists have begun to examine some of these fac-

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to attack development problems on a wide front, or to concentrate investment power and storm key positions of the stagnant economy. Another capital-accumulation-oriented controversy was the running battle over factor proportions. Should a developing country's investment program utilize existing factor costs as its base, or employ capital-intensive techniques automatically because of their higher potential savings? Is full manpower employment important enough politically to demand labor-intensive development?

The arguments went on to other areas. Should underdeveloped countries devise their own techniques or borrow from others? Will the price system suffice to point out scarcities and bottlenecks, or must the economy be managed? What are the effects of international trade on primary-product-producers? The common feature of most development theory until the past decade was its orientation toward technically economic questions.

[11] An excellent example is the puzzling failure of some recent "villagization" projects. Major problems were lack of precise knowledge of the interests of the relocated farmers, and failure of the (frequently expatriate) scheme managers to assess farmers' likely responses. (For an interesting critique of "Village Settlement" see P. M. Landell-Mills, "Village Settlement in Tanzania: An Economic Commentary," unpublished paper, University College, Dar es Salaam, 1966.)

[12] Economic Development (New York, 1959), p. 772.

[13] See Hirschman's theory of Social Overhead Capital (The Strategy of Economic Development [New Haven, 1958] and Kindleberger's interest in investments "which change people" (Economic Development [New York, 1958], p. 166.

A few economists have dealt systematically with the

tors, which Leibenstein has grouped under the phrase "X-efficiency" (includes motivation, plant-layout reorganization, materials handling efficiency, waste controls, and incentive payments).[14]

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human problems of economic change. Meier and Baldwin note that "Economic development of sufficient rapidity has not taken place within the present cultural framework. New wants, new motivations, new ways of production, new institutions need to be created if national income is to rise more rapidly. Where there are religious obstacles to modern economic progress, the religion has to be taken less seriously or its character altered. . . . In general, the economic problems are relatively simple compared with the broader and deeper sociological problems of respecting the general cultural patterns and institutions of the poor countries at the same time that they acquire new wants and the means of attaining them. Not only must economic organization be transformed, but social organization--as represented by such major institutions as caste, the joint family, the rural village, the church, and the schools--must also be modified so that the basic complex of values and motivation may be more favorable for development. . . . The fundamental problem is likely to be not how much economic change the economy can absorb, but rather how much cultural change the backward peoples can accept and how quickly." Underlining mine. (Economic Development [New York, 1957], pp. 358-359.)

[14] Several economists have recently shown quantitatively the importance of the human side of development. Kenneth Arrow demonstrated the relationship of time, experience, and growing knowledge with changes in the production function. See his article on American airframe construction and iron smelting in Sweden. ("The Economic Implications of Learning by Doing," Review of Economic Studies [March, 1959].) Zvi Griliches has shown that the spread of hybrid corn depends less on the availability of new hybrids than on the awareness that hybrids are more profitable. Once the need is clear, new discoveries are inevitable. Griliches found a similar situation with demand for fertilizers. Farmers obtained them not immediately after they were discovered, but only after they were proven to be profitable. A new fertilizer was not widely employed until relatively minor perfections made them less expensive. ("Hybrid Corn: An Exploration in the Economics of Technological Change," Econometrica, vol. 25, no. 4 [October, 1957], pp. 501-522, and "The Demand for Fertilizer: An Economic Interpretation of a Technical Change," Journal of Farm Economics, vol. XL, no. 3 [August, 1958], pp. 591-605.)

According to Leibenstein, "At the core of economics is

These recent writings have focused on the influence of efficiency and management skills on economic change. Leibenstein, Arrow, and Griliches are not concerned with "entrepreneurship," or its special psychological characteristics. Rapid communications, government monopolies and economic philosophies have made Schumpeterian entrepreneurship less essential to nation-wide development by providing a non-personal, "public" alternative.[15] While the inventiveness and risk acceptance of Schumpeter's entrepreneur has made him synonymous with modern international technical aid and governmental activity, the more contemporary theories of Hagen and Hoselitz are also less relevant from the policy point of view.[16] Hagen's "social marginals," who seek success through entrepreneurship because other routes to status are blocked, cannot except nurturance from modern nationalistic governments, in spite of the important place Hagen has correctly given them in the history of economic growth.

In the following chapters, the subjects and testing

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the concept of efficiency. Empirical evidence has been accumulating that suggests that the problem of allocative efficiency is trivial. Yet it is hard to escape the notion that efficiency in some broad sense is significant." He then arrives at the concept of "X-efficiency." ("Allocative Efficiency versus 'X-efficiency,'" American Economic Review [June, 1966], pp. 392-413.)

[15] J. J. Schumpeter, The Theory of Economic Development (New York, 1961), pp. 66-67.

[16] E. Hagen, On the Theory of Social Change (Homewood, Ill., 1962), and Bert Hoselitz, "Economic Growth and Development: Noneconomic Factors in Economic Development," A. E. R., Papers and Proceedings (May, 1957), pp. 28-29.

methods are described, and the results analyzed. This study then concludes with explanations of (1) why the tests produced negative results, and (2) why, even if positive results had been found, present achievement motivation testing techniques would have to undergo serious alteration before they can be brought into line with the ethic of the Tanzanian development effort.

II

METHODOLOGY: THE SUBJECTS

An interest in Tanzanian economic development invariably leads the investigator's attention to the Chagga who are responsible for remarkable coffee planting and marketing successes. The Chagga coffee growers, now over 50,000 strong, average nearly $120 per annum in value of coffee output alone.[1] If the value of other crops is added, their average per capita product may exceed $280.[2] Contrast this performance with the rest of the agricultural sector in Tanzania. While output per head throughout the country has been cited as $60 (1962), a correct figure for Tanzanian Africans would be considerably lower. Ninety-six per cent of the population belong to the non-money economy, while over 60 per cent of the Gross Domestic Product results from the monetary sector. Actual per capita output is probably closer to $30.[3]

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[1] Kilimanjaro Native Co-operative Union (KNCU), Thirtieth Annual Report 1961-1962 (Moshi, 1962), Introduction.

[2] Government of Tanganyika, Budget Survey 1963-1964 (Dar es Salaam, 1962), and Hadley E. Smith, Statistical Data on the Economy of Tanganyika (Dar es Salaam, 1964), pp. 2-5.

[3] M. von Clemm, "Agricultural Productivity and Sentiment on Kilimanjaro," Economic Botany, vol. 18 (1964), pp. 99-121, has shown the considerable value of Chagga crops other than coffee.

Chagga economic development has not been uniform. Neither of the extreme areas of settlement, Northeast Rombo or Northwest Hai, are as rich as central Chaggaland. Even in Vunjo there are small pockets of difficult terrain where output is less (Kimochi). Nevertheless, the number of farmers with money incomes over $500 per year and total incomes approaching $1000 is considerable, and wealth is reasonably well distributed. The Chagga are a peasant society that has widely accepted cash crop cultivation, not an example of economic development dominated by a few cases of isolated entrepreneurship.[4] Graph 1 shows the steady growth of coffee cultivation even though the available acreage has not risen correspondingly. In Machame, Kirua Vunjo and other rich parishes, member ledger cards in local cooperative society offices show nearly 20 per cent of farmers producing more than one ton of top grade Arabica coffee (value nearly $800 at 1963 prices).[5]

The Chagga are thus an inevitable choice for research in Tanzanian economic motivation. Choosing subjects for contrast to them, however, proved to be a problem, partially

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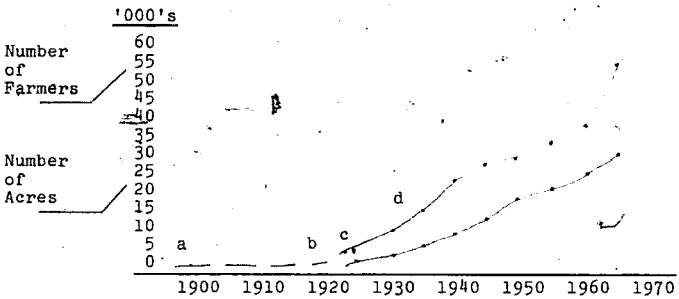
[4] There are Chagga entrepreneurs, particularly in local transportation services, but my attention has been devoted entirely to the peasant agricultural aspect of Chagga success as the most appropriate in the current political environment of Tanzanian development.

[5] Figures from the member ledger cards should be viewed skeptically (only as general indications of wealth). They are an improvement on the previous bookkeeping system (abandoned in 1961-1962) but, as von Clemm said, they "will not prevent the determined 'wealth-concealer.'" Ibid., p. 115.

because of the limitations of present achievement motivation testing methods. Most achievement motivation techniques were perfected in American classroom situations, where modern projection equipment was employed to produce maximum uniformity in test conditions. However, in one sense these strictures were beneficial for obtaining adequate samples with limited resources and time. Tanzanian secondary schools were therefore the only readily available source of subjects.

GRAPH 1

THE GRADUAL INCREASE IN COFFEE-GROWING ON KILIMANJARO



[a] Holy Ghost Fathers introduce coffee, 1895-1900, from Reunion Id.

[b] Arrival of Major Charles Dundas as D.C. under British Mandate.

[c] Kilimanjaro Native Planters Association established.

[d] KNPA expanded, became KNCU, with A. L. B. Bennett as manager.

Source: K.N.C.U., Progress of African Coffee Production on Kilimanjaro, mimeographed, July, 1965.

A. The Student Sample

Chagga students were abundant in the Tanzanian secondary schools, as a result of earlier interest shown by the tribe in primary education under both missions and government. Secondary school students' ability to demonstrate motivation on verbalized tests was likely to be less than that of American liberal arts college students who were used in perfecting those tests. However, these Chagga subjects offered an advantage from another standpoint. They were closer to their homes, both in distance and duration of separation, and would represent their tribe more closely than would Chagga University students. Recent research has demonstrated the gulf separating university-going Africans from their homes, and this "estrangement between students and nonstudents, especially relatives," would certainly not contribute to motivational congruity with their tribesmen.[6] The students who formed the principal sample for my research, however, were not strictly representative of their respective tribes. They were the more intelligent among primary school leavers who were fortunate enough to pass through the Standard IV and VIII bottlenecks into secondary school.[7]

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[6] William J. Hanna, "Students," in James S. Coleman and Carl G. Rosberg, Jr., Political Parties and National Integration in Tropical Africa (Berkeley, Cal., 1964), pp. 424-425. See also James S. Coleman, Education and Political Development (Princeton, N.J., 1965), p. 69.

[7] According to the World Bank Mission's 1959 figures, of the 107,000 students in Primary Standard I, 12% entered St. V, and 1.5% entered Secondary School (Standard IX). International Bank for Reconstruction and Development, The Economic Development of Tanganyika (Baltimore, 1961), p. 304f.

Access to the secondary school students was made easy through the assistance of the Minister of Education. When 100 students in a pretest[8] demonstrated an ability to master the test battery, I decided to test the 930 available Chagga students in four Kilimanjaro Region secondary schools.

The next important problem was to locate subjects from a less economically successful tribe for comparative purposes. Probably the most interesting contrast would have been provided by the Wazaramo, the Moslem coastal people near Dar es Salaam. They have shown little economic initiative, and are usually placed at the opposite end of the scale from the "modernistic, eager" Chagga. Unfortunately, there were not enough Wazaramo in secondary schools to form an adequate sample.

The Waluguru offered another possible comparison group. They appeared particularly appropriate because of their resistance to agricultural innovation during the 1950's.[9] The analogy was not valid, however, because of the varying political content of the two situations. Coffee came to the Chagga from Missionary Stations, and was encouraged by the Colonial Government only after it had taken hold, and then during a politically quiescent period. Terracing was forced on the Waluguru by an unpopular administration coincidentally with the uprise of nationalism and TANU. It was

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[8] Students from Kibaha School, Dar es Salaam.

[9] Roland Young and Henry Fosbrooke, Smoke in the Hills (Evanston, Ill., 1960).

therefore not appropriate to use that tribe's example as the opposite to Chagga adaptiveness. In any case, not enough Waluguru were in secondary schools. I therefore fell back on the Bondei, a Moslem Coastal tribe located in Tanga Region. In the four Chagga-dominated Kilimanjaro schools and Minaki School, Dar es Salaam, were 89 students from this comparatively small tribe.[10] These Bondei subjects could not be expected to represent their tribe as well as would Chagga students for two reasons. Greater distances to the schools had forced the Bondei sample to leave their home area, and most of the students were Anglicans, while their tribe is predominantly Moslem.[11]

In spite of these factors working to weaken the Bondei students' representativeness of their tribe, I considered them an adequate contrast for the Chagga. The lower Pangani Valley[12] is vastly different from Kilimanjaro ecologically, and the economic response of the Bondei has been hampered by other factors (land alienation, administrative neglect) at the same points where the Chagga have been so fortunate. These features are explored further in Chapter VI as is an even more important difference; the varying cultural experi-

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[10] Chagga (380,000) are the nation's fifth largest tribe. Bondei are one of the 95 of Tanzania's 120 tribes that number under 100,000.

[11] The Universities Missions (Anglican) were active in Bondeiland from the 1890's on.

[12] The Bondei extend over parts of three districts; Tanga, Pangani and Handeni.

ences of the two tribes.

A third student group was included for comparative purposes. One of the Kilimanjaro schools produced over 100 tests by Asians from Moshi families. Some were Christians or Moslems from Goa or Pakistan, but 63 Hindus were a reasonably homogeneous group.

B. The Peasant Farmer Sample

When a preliminary examination of the students' test results indicated little difference in achievement motivation between the three tribal samples, I decided to test farmers from Chaggaland and Bondeiland directly, which led to changes in testing methods and to different sampling techniques. More selective sampling was necessary because of the time used in individual testing. The Chagga farmer sample was therefore deliberately structured into "successful" and "unsuccessful" categories. With a Chagga assistant and a representative from the Kilimanjaro Native Co-operative Union, I traveled to a dozen local primary societies in Machame, Masama, Kibosho and Kirua Vunjo. The names of farmers in each cooperative who were either notably successful or unsuccessful were requested. In our negotiations with the local cooperatives' representatives (usually the Chairman and Secretary), the same criteria for selecting the sample were stressed.

A discussion of the criteria for choosing "good" or "bad" farmers invariably produced a unanimous list of at

least five or six members of each local society. The Society Secretary knew practically every farmer personally, and the discussions clearly showed that some of the hardest working and brightest farmers, those with drive or ambition, were not necessarily the highest quantity producers. Chagga inheritance patterns have led to extreme fractionation of land and to structural production problems difficult for the farmers to overcome. In several cases we were told of farmers who produced large crops with practically no effort by inheriting a large farm and paying someone else to work on it. Other farmers, whose total production was less, might fit the criteria because their coffee was always the cleanest and best quality and because they were quick to use new techniques, establish the proper proportion of shade cover to coffee trees, and employ fertilizers correctly.[13] Eventually, 61 farmers were interviewed, including 30 in the group designated "bad" farmers and 31 designated "good."

C. Measuring Actual Achievement

The farmer sample was chosen because of exceptional achievement (or exceptional lack of it). The students' actual achievement had to be measured after they were tested for achievement motivation, and only two criteria were available.

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[13]The Society representatives were, of course, under no obligation to give such information. In fact these officials were usually concerned with protecting their membership as much as possible from government information seekers or tax collectors. We gained their confidence only by convincing them of the scientific nature of the project.

Their grades were an obvious source of measurable actual achievement. These were collected for the three terms prior to testing, averaged, and ranked within the classroom group.[14]

A second source of actual achievement information was economic success by the students' families. This material was procured for 321 of the 931 Chagga students by ascertaining the amount of coffee grown by their families from the records of the local cooperative societies.

The imperfections in these measures of actual achievement should be stressed. Students' grades were definitely the more valid of the two, but their relevance to economic achievement, and to achievement motivation, is certainly not to be taken for granted. Indeed, some theorists argue that economic achievement should be considered as an alternate route to status for those unsuccessful in other fields (political, military, intellectual are examples, although the order may vary).[15] Student grades would then correlate negatively with economic achievements of adulthood: the best students may go on to government service or some other position offering status and economic security. Furthermore, this argument questions the relevance of achievement motivation tests to economic ambition, since the tests were mostly developed in American college conditions, with student aca-

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[14] Classes, or sections, were kept separate in computing correlations with achievement motivation variables because of the differences between schools and teachers.

[15] Hagen, On the Theory of Social Change.

demic achievement as the measure of validation. This possibility stimulated my interest in finding an economic measure of achievement. Family coffee production figures, although no more than a general indicator of the students' home environment, were the best available measure of economic success. A student who listed his father's occupation as "farmer" (but one who produced no cash crop) came from a relatively poor family. Fathers who were wage earners or high coffee producers meant a student from a relatively wealthy family. No more precise value could be placed on the levels of family achievement because they would surely have been incomplete and potentially misleading without a full investigation of the value of non-cash-crop product.

III

METHODOLOGY: TESTS, SCORING, AND RELIABILITY

A. The Test Battery

The time factor was the principal difficulty in studying Chagga achievement motivation. Forty to sixty years have elapsed since many farmers were called upon to change their traditional farming patterns and introduce coffee. Yet there was no way to study achievement motivation directly among those innovating Chagga, most of whom were dead. Methods have been devised for comparing past societies by analyzing either imagery in folk tales or school readers, or designs on exhumed pottery.[1] But there were no techniques yet capable of describing levels of achievement motive in individuals or small subcultures which have left no systemmatically analyzable materials, such as written samples of school work. This difficulty could be overcome in part because of the relationship between motives and socialization which links the

[1] D. C. McClelland, et al., "An attempt at the estimation of n Achievement levels from archeological materials in a non-Western tradition" (unpublished paper, University of Illinois, 1961), and also D. E. Berlew, "The Achievement motive and the growth of Greek civilization" (unpublished thesis, Wesleyan University, 1956).

adult's personality to the environment of his childhood.[2] To some extent, personality must reflect the family and the cultural milieu. (Just how much this is true is difficult to show quantitatively, as "national character" theorists have discovered.) There is some point, then, in examining present-day Chagga students for characteristics that might have contributed to the innovativeness of their fathers and grandfathers.

In any case, with African peoples there is no methodological alternative to testing the present generation, even on the larger, national level. The old societies of Africa have produced almost no written records, and tribes from wetter climates left few samples of pottery, architecture, or other materials that might be suitable for achievement motivation analysis. The slow, steady acceptance of coffee growing by Chagga farmers, depicted in Graph 1 (page 15) supports the view that past Chagga achievement can be understood from contemporary subjects.

Limited to studying the descendants of the earliest Chagga innovators, I decided to employ both projective and direct tests. Although with normal subjects these two techniques may produce many similar results, the personality

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[2]According to Neo-Freudian theory, basic personality formation occurs early in life, and becomes increasingly more difficult to alter as a person ages. To Erikson, "Man's 'inborn instincts' are drive fragments to be assembled, given meaning, and organized during a prolonged childhood by methods of child training and schooling which vary from culture to culture and are determined by tradition." (Childhood and Society [New York, 1965], p. 89.)

characteristics which are most elusive may be the most important in motivational research. Therefore, I made the following assumption: effective measurement of achievement motivation is the exclusive province of neither direct nor projective methods.[3]

After a brief description of each test employed in this research, I deal with the problems of adapting the test to Tanzanian conditions.

The McClelland Thematic Apperception Test for Achievement Motivation. McClelland has written that strong achievement motive is a crucial behavioral characteristic of the economic achiever. This acquired motive must be measurable to be of any use to economic planners. To provide such a measure, the McClelland research group spent several years developing the TAT for achievement motivation.

In the McClelland version of this technique,[4] subjects

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[3]Discussions of the relative merits of projective and direct methods are to be found in A. Davis, "Comparison of Three Types of Personality Assessment," Journal of Personality, vol. 23 (1954-1955), G. W. Allport, P. E. Vernon and G. Lindzey, Study of Values: Manual of Directions (Boston, 1951), p. 4, P. E. Vernon, Personality Assessment: A Critical Survey (London, 1964), Ch. 10, and L. W. Doob, "An Introduction to the Psychology of Acculturation," Journal of Social Psychology, vol. 45 (1957), p. 156. For a definition of each type, see R. B. Cattell, "Projection and the Design of Projective Tests of Personality," Character and Personality, vol. 12 (1944), pp. 177-194.

[4]For the original version, see H. A. Murray, Thematic Apperception Test Manual (Cambridge, Mass., 1943), and Murray et al., Explorations in Personality (New York, 1938). For McClelland's version, R. C. Birney and R. C. Teevan, Measuring Human Motivation (Princeton, N.J., 1962), p. 88, and D. McClelland, The Achievement Motive (New York, 1953).

are shown four pictures:

1. Two men standing next to a machine in a workshop
2. A student sitting at a desk
3. Two men talking
4. A hospital operating scene

The respondents are asked to write a story about the picture based on the following questions. "What is happening? What has led up to the situation? What are they thinking? What will happen?" The response depends on whether the subjects take part in the phantasy by empathizing with one of the characters in the picture, and infusing their stories with images and phrases that express their own levels of achievement motivation.[5]

During McClelland's first attempts to use the technique, subjects were aroused beforehand with skill tests. But, as McClelland noted, arousal stimuli proved superfluous. "There were no differences in the frequency of various types of outcomes of the stories written under 'aroused' conditions as compared with those written under normal conditions."[6] These experiments led McClelland to conclude that the subjects' strong inner concern with achievement would be sufficient to differentiate them from non-achievers under simple, unaroused conditions.

The McClelland TAT could not be immediately used in

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[5]The process of thematic apperception is technically described by Murray (op. cit.) and in J. C. DeRidder, The Personality of the Urban African in South Africa (London, 1961), pp. xiii-xiv.

[6]McClelland, The Achieving Society, p. 42.

Africa. Simon Biesheuval has pointed out the difficulties of applying most modern psychological techniques cross-culturally. "Western Culture, within which scientific psychology originated, has inevitably served as the frame of reference for the formulation of these hypotheses. As a result, psychological laws may lack universality."[7] While Biesheuvel was concerned with general psychological precepts, his fears are just as applicable to many of the tests that have appeared to provide data for psychological study. To what extent can a measure designed in America and used, for the most part, under American conditions be applied to African cultures, and what alterations must it undergo?

No attempt has yet been made to apply the TAT for achievement motivation to sub-Saharan Africa.[8] However, there have been generalized TAT studies carried out in the Congo and South Africa which stressed racial and cultural congruity between subjects and test materials.[9] These stud-

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[7] S. Biesheuvel, "Objectives and Methods of African Psychological Research," Journal of Social Psychology, vol. 47 (1958), p. 161.

[8] Modifications of McClelland's TAT have been given in Japan, India, and Brazil. See McClelland, The Achieving Society, Ch. 7.

[9] A. Ombredane, "L'Exploration de la Mentalite des Noirs Congolais au moyen d'une Epreuve Projective: Le Congo TAT," Institute Royale Coloniale Belge--Section des Sciences Morales et Politiques, Memoires, vol. (1954). S. G. Lee, Manual of a Thematic Apperception Test for African Subjects (Pieter-maritzburg, S. Africa, 1953), and E. T. Sherwood, "On the drawing of TAT pictures, With Special Reference to a Set for an African People Assimilating Western Culture," Journal of Social Psychology, vol. 45 (1957), p. 166. For comment on these attempts, see R. A. LeVine, "Africa," Psychological

ies concluded that each picture as a whole must be easily understandable in its symbolism, gestures, activities, and overall appearance. The symbols "must be so selected and presented as to facilitate the reflection of unconscious processes, especially in their relation to the infantile stages of personality formation."[10] Some past writing on depth perception in South Africa has asserted that the capacity of African subjects at less modernized stages of acculturation to assimilate TAT pictures is reduced because of unfamiliarity with the three-dimensional medium.[11] I assumed that the Chagga would not pose a problem of this type. They have been exposed to missionary education and other forms of modernization for decades. Nevertheless, the problem of three-dimensional interpretation may have had a bearing on some of the Chagga TAT responses when drawings rather than

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Anthropology, F. Hsu, ed. (Homewood, Ill., 1961), p. 67, and S. Biesheuvel, "Methodology in the Study of Attitudes of Africans," Journal of Social Psychology, vol. 47 (1958). On the necessity for racial congruity in the TAT, see C. E. Thompson, Manual for Thematic Apperception Test--Thompson modification (Cambridge, Mass., 1949).

[10] Sherwood, op. cit., p. 181.

[11] B. W. Hudson has stated that tests demanding three-dimensional visual interpretation are dangerous under certain conditions, because some subjects tend by tradition to interpret two-dimensionally. A picture showing a man in the foreground and an elephant in the distance might be wrongly interpreted as a "man with a baby elephant," or a "giant man and an elephant." Biesheuvel has summed up the situation: "Preliminary investigations indicate a profound unfamiliarity with the conventions of graphic representation, even among fairly well educated Africans. The rules of perspective drawing are not understood." (Biesheuvel, "Methodology . . . ," p. 176, and B. W. Hudson, "Pictorial Depth Perception in Sub-Cultural Groups in Africa," Journal of Social Psychology, vol. 52 [1960], p. 207.)

photographs were used as stimuli.

Thematic Apperception testing obviously poses grave problems as a cross-cultural measure of achievement motivation. It is too complex to administer "evenly" (with identical stimuli and conditions) over a large sample, and it requires too elaborate a response, which is likely to be overly biased toward high educational levels and facility with word-expressed imagery. The researcher has to create pictures which are appropriate to each particular culture, while not altering their content. Finally, the scoring system may have to be modified as it was for Tanzanian subjects.

Sentence Completion. In recent years, researchers who anticipated the problems posed by McClelland's TAT have searched for a suitable substitute. They desired an alternative method of evoking fantasy that would not be as suspect under cross-cultural conditions.

One approach was to examine a society's folk tales, literature, and lower-level school readers. But results from this type of examination led to cultural generalizations rather than data on samples of individuals. Child, Storm, and Veroff, using a sample of folk tales from a number of pre-literate societies, found that the Chagga materials were low in achievement imagery ($r = -.182$) while the folk tales of their neighbors, the Masai, were achievement-laden ($r = .326$). However, as will be pointed out in Chapter VI, Chagga society employed initiation, hazing, and traditional education

(including folk tales) to counter a significant dose of pastoral life-values absorbed during adolescence.[12] Another verbalized approach was dream report analysis, adapted for achievement motivation analysis by Robert LeVine.[13] Freud's emphasis on latent dream content had led scholars away from examining manifest evidence. According to LeVine:

> Since the achievement motive is assumed to be a transcultural dimension of motivation, since motives have been shown to affect fantasy of which dreams are a form, and since the manifest content of dreams has been shown to reveal the motivations of the dreamer and the impact of the culture upon the individual, it was felt that we could legitimately expect to find evidence of achievement motivation in night-time dream reports.[14]

His Nigerian research reinforced LeVine's optimism about the utility of dream content analysis, and he urged me to employ this technique in Tanzania. However, much of the difficulty with the TAT is related to its reliance on verbalization

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[12] I. L. Child, T. Storm, and J. Veroff, "Achievement Themes in Folktales Relating to Socialization Practice," Motives in Fantasy . . . , J. W. Atkinson, ed., pp. 479-492. D. C. McClelland and G. A. Friedman, "A Cross-Cultural Study of the Relationship Between Child-Training Practices and Achievement Motivation Appearing in Folk Tales," in G. E. Swanson, T. M. Newcomb, and E. L. Hartley, Readings in Social Psychology (New York, 1952). S. Parker, "Motives in Eskimo and Ozebwa Mythology," Ethnology, I (1962), pp. 516-523. N. M. Bradburn and D. E. Berlew, "Achievement and English Economic Growth," Economic Development and Cultural Change (1961).

[13] Robert A. LeVine, Dreams and Deeds (Chicago, 1966). Also, C. S. Hall, The Meaning of Dreams (New York, 1953), and Dorothy Eggan, "The Manifest Content of Dreams: A Challenge to Social Science," American Anthropology, vol. LIV (1952), pp. 469-485; "Dream Analysis," Studying Personality Cross-Culturally, B. Kaplan, ed. (Evanston, Ill., 1961), pp. 551-578.

[14] LeVine, ibid., p. 117.

(limiting it to use among highly literate and therefore unrepresentative segments of African populations). The search for a simpler method should not stop half way. Dream reports have not solved "the problem of stimulus equivalence in cross-cultural research."[15] LeVine's point, that TAT pictures must be severely restructured, while dreams "appear to be a universal phenomenon," does not reduce the overwhelming verbal emphasis of both methods. LeVine concedes this while comparing dream reports to TAT protocols, for which a "minimal educational level is necessary in order to respond. Dreaming makes no such demands. Educated and uneducated alike dream. The only requirement necessary to obtain data is the ability and willingness to report the dream experience."[16]

Sentence Completion is a technique which offers the most likely replacement for highly verbalized tools. It is also simpler to administer and score. Denton Morrison devised an application of this method to use especially with farmers rather than college arts and social science majors.[17] Sentence completions evoke a quicker reaction than the frequently fabricated and premeditated stories written for a TAT, and instead of dream reports that may be intentionally

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[15] Ibid., p. 121.

[16] Ibid., p. 122 (underlining mine).

[17] Denton Morrison, "Achievement Motivation: A Conceptual and Empirical Study in Measurement Validity" (PhD Dissertation, University of Wisconsin, Madison, 1962).

sensationalized or selected by the respondents. No elaborate technical preparation is required, no facilities which might be in short supply "up-country."

Originally the Sentence Completion Test was composed of five partial sentences, which farmers were asked to complete spontaneously with the first ending that came into their minds. Employed by Neill and Rogers in Ohio, sentence completion results for achievement motivation correlated with "actual achievement" variables such as "man days of labor on the farm ($p < .01$), "number of acres in the farm" ($p < .05$), "production man work units" ($p < .05$), gross farm income, and educational level.[18] The authors suggested that more items should be added to both the list of incomplete sentences and the actual achievement measures. I added seven partial sentences suggested by Neill and Rogers, giving a total list of 12 incomplete sentences:

1. These days a farmer should . . . . . .
2. A good farmer . . . . . .
3. A (ten) acre farm . . . . . .
4. An ideal man . . . . . .
5. I used to dream about . . . . . .
6. I am not at all satisfied with . . . . . .
7. What I like most is . . . . . .
8. To harvest 100 lbs of coffee per acre, one should . . . . . .
9. If I was disabled, I would be . . . . . .
10. What I lack is . . . . . .
11. My farm lacks . . . . . .
12. Progress in farming these days necessitates . . . . . .

The original versions of the partial sentences were

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[18] Ralph E. Neill and Everett M. Rogers, Measuring Achievement Motivation Among Farmers (Columbus, Ohio, 1963), p. 12.

modified only in the cases of numbers 3 and 8. In number 3, Neill and Rogers employed a constant figure of "a 400 acre farm." With any variation of farm size, this is surely an inadequate solution. During the background interviews, when the size of a farmer's holdings was mentioned, double that amount was inserted as the figure for this partial sentence. Thus in all cases a response based on similar type of stimulus was possible. Number 8 was changed to conform to the market crop grown by the Chagga and to a high estimate of yield per acre for that crop.

Measuring Achievement Motivation by Color Preference. Knapp and Green have referred to the high achiever as one who is "fundamentally committed to playing an active role with respect to his environment. He looks upon his environment as something to be managed and manipulated, and upon himself as the executive or manipulator."[19] Here the achiever is "looking at" his environment only in general terms. What does he actually "see" in visual terms?

Ordinarily, our environment presents a range of colors including brown, green, blue, grey and tan. Koffka called these "ground colors," and another Gestalt psychologist, Liebmann, referred to them as "soft" colors.[20] As Knapp ex-

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[19] R. H. Knapp and H. B. Green, "The Judgment of Music-Filled Intervals and n Achievement," Journal of Social Psychology, vol. 54 (1961), p. 263.

[20] S. Liebmann, "Über das Verhalten Forbiger Forman bei Helligkeitsgleichheit vom Figur und Grund," Psychol. Forsch., vol. 9 (1927), cited by Knapp in Atkinson et al., Motives . . . , p. 372. M. Koffka, Principles of Gestalt Psychology (New York, 1935), p. 127.

plained, a soft color "holds form poorly, is malleable, and is a preferred 'ground' color" for persons with high achievement motivation. Hard colors, or "figure" colors, are red, yellow, and other bright shades. Red, as an example, "resists perceptual distortion, and imposes itself as figure in the perceptual field."[21] Because of these relationships between the two types of colors, Knapp proceeds:

> We may now tentatively assert that the preference for somber bluish tartans and the dislike of red by individuals with high n Achievement follows. For such persons require that their environment be "soft" while they are "hard"; they wish to exert their will effectively--to manipulate, not to be manipulated. They will seek a "passive" environment and eschew strong, intrusive stimuli.[22]

Knapp cited historical examples to substantiate the theory,[23] but realized that one could also find many exceptions in history to disprove it. To raise the subject from the level of coincidence and conjecture, Knapp created a color preference

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[21] R. H. Knapp, "n Achievement and Aesthetic Preference," in Atkinson, et al., Motives . . . , p. 372.

[22] Ibid. These are not entirely new arguments, merely technical interpretations of phenomena that have been observed before in less psychological terms. Spengler's "Faustian will" colors were blue and green, the colors of distant environment, while red and yellow were "near" colors, competing with the individual himself. (The Decline of the West, vol. 1 [New York, 1932], p. 246.) McClelland pointed out that Spengler's Faustian will "has a strong power component." But, he added, "it still seems reasonable to infer that the person with high n Achievement might prefer colors like blue and green which he can 'act on' as background, so to speak, as contrasted with reds and yellows that act on him." (The Achieving Society, p. 309.)

[23] I.e., the Somber dress of northern Europe's Protestants as compared with Mediterranean Catholics, and of Puritans as compared to Cavaliers. ("n Achievement and Aesthetic Preference," p. 372.)

test which could be correlated with other measures of achievement motivation. Knapp's "Tartan Test" presents a choice composed of examples that are "controversial." The test materials include only choices for which there was no general agreement among American judges as to whether an object (Scottish plaid) was "bad" or "good." As Knapp reported, earlier efforts to use paintings failed because of their subjective nature. In a test that involves projection, the subject should not be entirely aware of the nature of the response being elicited from him. Nonetheless, the subject's choice must be primarily determined by the particular psychological chracteristic being tested. Paintings were thus unsuitable because of "object identification, variation in technique, size and shape," which created a choice dictated by criteria other than color.[24] Scottish tartans, to which Knapp finally resorted, suffered from few of these distractions.[25] From the 200 tartans illustrated in Bain's Clans and Tartans of Scotland, three quarters were excluded by 40 American judges as "patently unattractive or repititious specimens." Most and least popular were thus excluded, leav-

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[24] R. H. Knapp, "n Achievement and Aesthetic Preference," p. 367.

[25] "First, they vary in design only in certain specific and measurable ways, i.e. predominant color, number of colors, fineness of texture, symmetry, complexity, brightness contrast, etc. Each of these is objectively measurable. Again, they are of uniform size. Third, they do not contain object representation with its attendant distractions. Finally, there are over 200 recognised clan tartans from which selection may be made." Ibid., p. 367.

ing 30 "highly varied 'controversial' tartans."[26]

The results of preference tests using these remaining "controversial" tartans were then correlated with achievement motivation scores for the same subjects on McClelland's verbal TAT. At first, the low degree of correlation, ranging only from .18 to .20 with the TAT results, seemed discouraging. But when Knapp looked at the characteristics of the ten tartans that correlated with high achievement motivation, and of the ten that correlated negatively, he "found some clear differences in stimulus properties which cannot be ignored and which quite surely cannot be explained as a chance deviation from a null relationship."[27] The ten positive tartans differed from the ten negative ones by being "almost uniformly somber while negative tartans are almost uniformly bright. This impression is immediate and overwhelming." Seven of the tartans correlating negatively with achievement motivation scores were "dominantly red, while among the positives only one could doubtfully be so described."[28] The final conclusion to emerge from Knapp's study brought out color as the important variable, since "preference for red is consistently associated with a low n Achievement while preference for blue is associated with high n Achievement."[29]

Thus, according to Knapp, choice of tartans relates to

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[26] Ibid., p. 368. [27] Ibid., p. 370. [28] Ibid.

[29] Ibid., p. 371. "The examinations of other features of stimulus quality, such as fineness of texture, symmetry, etc. do not yield decisive further findings."

one's achievement motivation. In the case of "high achievers," their choice of somber tartans reflects a particular "ego strategy." They follow "a general policy of pursuing well-being through adopting an active manipulatory role with respect to the environment."[30]

For the researcher approaching field work in non-Western contexts, Knapp's work leads directly into questions of cross-cultural applicability. The medium employed as a setting for any projective test affects the results tremendously. Color is usually associated with a particular context. The sea is blue-green. A Western businessman's suit is usually gray or brown. Knapp's problem was to find a medium which would be subjectively acceptable in any color, thus making the unconscious color choice the crucial variable. Tartans would indeed seem to fulfill this requirement, unless some knowledge of and personal feelings about particular clans and their tartans interfered with the projective color choice. (For example, the Tartan test might prove invalid in Scotland.) Furthermore, as was noted above, some attempt was made to eliminate non-controversial tartans.

Are tartans applicable cross-culturally? McClelland warns: "Previous research has tended to emphasise that colors mean different things in different countries; what seems lively to Spengler, the color for 'noisy hearty market days and holidays' may be the color of other-worldliness, with-

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[30] Ibid.

drawal, and holiness for another people ..... Is it really likely," asked McClelland, "that people with high n Achievement would be attracted and repelled by the same colors the world around?"[31]

To answer this question, he attempted to correlate color preference with the results of the graphic expression test (discussed later in this chapter). In making their doodles, subjects were given sets of blue, green, red, and yellow pencils. Since the stimulus designs used in the four-country graphic expression test were black on white, color choice depended entirely on the Subject.[32]

The results of the color analysis correlated significantly with graphic expression as a measure of achievement motivation, but hardly at all ($r = .05$) with thematic apperception. Somber color preference and achievement motivation correlated positively "in all four countries and significantly so in the predicted direction for three of them." McClelland then felt confident to say that the results "yield the inference that on a world-wide basis there is a highly significant tendency for subjects with high n Achievement to prefer blues and greens over reds and yellows." He added:

> Apparently, so far as such fundamental distinctions as the "figural" quality of red and the "ground" quality of blue and green are concerned, one need not be a complete

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[31] The Achieving Society, p. 310.

[32] One might well ask whether the use of black in the stimulus design might not have "cued" subjects to draw their doodles in blue or green rather than one of the "figure" colors.

> cultural relativist and hold that it is equally easy for people to see these colors one way as the other. Instead, the simplest interpretation of the significant results is that blue and green are universally perceived as less "intrusive" than red and yellow, and that subjects higher in n Achievement prefer them for this reason.[33]

But, as McClelland himself admitted, there are many historic examples of entrepreneurs who were not particularly "ascetic" in Max Weber's sense of the Protestant ethic. The Japanese, Indians, Lebanese, Goans and others, either living outside or having been forced out of their own culture, do not conform in many ways to Weber's norms. To clarify this conflict, McClelland called for a change in the definition of "asceticism" away from its emphasis on morality to an emphasis on psychology. Rather than a moral sense of renouncing pleasures, or denying "libidinous impulses in the interest of maintaining a completely rationalised social and moral existence," we should consider asceticism in terms of "avoiding intrusive stimuli; so that one may act on rather than be acted upon by the environment."[34] If we were to think in these terms, asceticism "may more nearly universally characterize entrepreneurs."[35]

Thus, there were indications that color preference might measure achievement motivation cross-culturally, and the Tartan test was a tool ready for use. Other considerations dictated further caution. Frequently, observers have

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[33] McClelland, The Achieving Society, p. 312.

[34] Ibid.

[35] Ibid., p. 313.

noticed that agriculturally, architecturally, and in other practical contexts, basic design among traditional African peoples is not often rectilinear. The ground plan and other features of Zimbabwe serve as a famous example. Psychologists have also noticed this phenomenon, and have statistically measured it. Using a rotating windowframe viewed from an angle, Allport and Pettigrew found that certain types of optical illusions under particular conditions were perceived more frequently by "urbanised acculturated" Zulu children. Other Zulu children, less influenced by westernization, "whose own culture is virtually devoid not only of windows, but, to a surprising extent, of angles, straight lines and other experiential cues," reported seeing "trapezoidal" illusions less frequently.[36]

Should this Zulu example deter us from using rectilinearly-designed test materials among any Bantu? The authors of the Zulu study admit that those South African peoples have developed the "most spherical or circular" of African cultures. Given a modern plow, they are unlikely, at first, to plow a straight furrow.[37] In a test situation among the Zulu, subjective inability to accept or comprehend the tartan design might jeopardize unconscious color choice as the crucial variable. In this case, we would have an ex-

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[36]G. W. Allport and T. F. Pettigrew, "Cultural Influence on the Perception of movement; the Trapezoidal Illusion among Zulus," Journal of Abnormal and Social Psychology, vol. 55 (1957), p. 106.

[37]Ibid., pp. 106-110.

ample of the psychologist unwittingly substantiating predetermined hypotheses. Westernized Zulu, who are more likely to be economic innovators in the money economy, would be also more likely to understand the test's rectilinear forms, and respond better to it!

For the purposes of the present research, I felt that the Chagga, highly exposed to the money economy and educationally "progressive" in comparison with their neighbors, would have little trouble with rectilinear designs. For that reason, a form of the tartan test was employed.[38]

Time-related attitudes and dynamic personality. No effort to isolate the psychological characteristics of the economic achiever can neglect his attitude toward the passage of time. Does the high achiever watch time closely, concerned that minutes are continually slipping past, hours that will be gone without appreciable result unless he employs himself and his resources as productively as possible? Robert Knapp and Helen Green have written about this question:

> Anthropologists again and again have spoken of the distinction between the acute time awareness of industrialized Western man and the obliviousness to time which characterize many non-Western and primitive peoples. We believe that one of the most striking features of Western civilization has consisted in the manner in which it has come to manage and measure time. Upon this skill, much

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[38] This problem of the proper medium for a color preference test should be examined. I have compiled alternative test materials, notably a collection of wall-paper samples of predominantly roundish design, and hope at some future date to employ them as a possible achievement motivation measure.

of the development of modern industrialism depends. . . .[39]

There have been attempts through psychological research to discover the relationship between achievement motivation and attitudes toward time. McClelland asserted that individuals with high achievement orientation are more apt to organize their affairs carefully to take advantage of time. They are more likely to anticipate accurately and consistently the success of future goals. Generally, achievers are more adept at time measurement. In producing his thematic apperception measure, McClelland took these presumed attitudes into account by scoring for the presence of time awareness in TAT results.

A number of ingenious tests have been devised, notably by Robert Knapp. Knapp and Garbutt's "Time-metaphor test" is an attempt to measure time orientation indirectly by eliciting a preference for certain time-influenced poetic phrases over others. The foundation of their test was a basic assumption about the nature of the highly motivated achiever.

> indiyiduals with high need for achievement are basically committed to an "ego posture" characterized by a desire to manipulate the environment. As such, it is a matter of ego strategy to look upon the environment as the material upon which it may work its will. We might anticipate, therefore, that persons with high n Achievement would have an acute awareness of time as a medium in which achievement might be realised, that time would be deemed more than usually precious and that time would therefore be viewed as moving rapidly.[40]

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[39]"The Judgment of Music-Filled Intervals and n Achievement," Journal of Social Psychology, vol. 54 (1961), p. 266.

[40]R. H. Knapp and J. T. Garbutt, "Time Imagery and the Achievement Motive," Journal of Personality, vol. 26 (1958), pp. 424-427.

Differences in time orientation between developed and underdeveloped countries serve as a guide to these arguments. E. T. Hall has pointed out the great disparities between time orientation in the United States and in most poorly developed countries. Time is seen as something tangible in the United States, a commodity that can be manipulated to the advantage of its "owner." Americans are more likely to consider time "valuable."[41]

If these attitudes towards time are representative of general characteristics of innovators, there would be value in measuring them. Several techniques were devised mostly in American universities, but most were too complicated for Tanzanian conditions.[42]

For my purposes, where time orientation was only one measure for which quantification was needed, I chose a simple and short test. A second consideration, even more important, was the desire to employ a test which could be used cross-culturally. The Time Metaphor Test, perfected by Knapp, was designed to reveal the subjects' unconscious attitudes toward time. In Knapp's opinion, "anticipation" of future goals,

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[41] E. T. Hall, The Silent Language (New York: Doubleday, 1959). McClelland compares "entrepreneurial spirit" with the actions of Hermes, off and running in search of Apollo's cattle as soon as he was born! (The Achieving Society, p. 324.)

[42] For description of these methods, see H. B. Green and R. H. Knapp, "Time Judgment, Aesthetic Preference and Need for Achievement," Journal of Abnormal and Social Psychology, vol. 58 (1959), pp. 140-142, Knapp and Garbutt, "Time Imagery . . . ," pp. 432-433, and McClelland, ibid., pp. 327-328.

scheduling, and other such concerns with the management and measurement of time characterize the individual with high achievement motivation.[43] The test elicits a choice of "aesthetic appropriateness" of several time phrases which are typical of many existing in folk lore and literature. Why not ask the subject directly how he views the passage of time? Knapp explains his use of a semi-projective measure. "It is our judgment that this procedure succeeds in tapping attitudes and motives which are not readily formulated spontaneously." The subjects were first given McClelland's TAT, and then called upon to judge the appropriateness of 25 "controversial" time metaphors.

Knapp pointed out that in the top ten metaphors which correlated positively with high achievement motivation, eight depicted fast motion, while only two were slow or static. Of the ten metaphors with greatest negative correlation, none described fast motion. He concluded that "Our expectation that n Achievement would prove associated with swift image of time seems generally confirmed." Further analyses of the results showed that positiveness of direction seemed to be an important embellishment to rapid motion in making certain metaphors acceptable to highly motivated achievers. "A fast moving shuttle" and "a whirligig" show haste but little direction, and they tended to correlate less positively with n Achievement than did metaphors with clear direction.[44]

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[43] Knapp and Garbutt, ibid., p. 426.

[44] Ibid., p. 429.

From the metaphors Knapp and Garbutt employed I chose the 8 listed below (with their degree of correlation with the McClelland TAT measure of achievement motivation for American respondents).

TABLE 1

METAPHORS CHOSEN FROM KNAPP AND GARBUTT TIME METAPHOR TEST

Knapp and Garbutt Metaphor	Correlation of American Subjects' Preference with their Results on TAT
a dashing waterfall	.41
a bird in flight	.30
a speeding train[a]	.23
a fleeing thief	.22
drifting clouds	-.03
a large revolving wheel	-.23
a vast expanse of sky	-.31
a quiet, motionless ocean	-.41

[a] changed to "a speeding bus" for use in Tanzania.

Can such a test ever claim to be cross-cultural? Is there any "tendency for similar metaphorical figures to occur in widely disparate linguistic groups, suggesting that common attitudes may be expressed by similar devices in many varying cultures."[45] Certainly we may assume that African cultures will in most cases be familiar with drifting clouds, birds in flight, and wind driven sand. Great care must be exercised, however, in the choice of metaphors. It may be that cross-

[45] Ibid., pp. 429-430.

cultural time-metaphor testing is hopeless in terms of one widely-applicable set of metaphors. Perhaps the most we may assume (until even that is disproven) is that achievers will show a similar world-wide attitude toward time. The choice of particular metaphors may have to depend on the culture.

Human motions as an indicator of achievement motivation. Can economic achievers be distinguised from people of different motivation by their physical actions? Do they move more rapidly, more carefully, and with more sense of purpose? An ingenious method of measuring these behavioral styles was created by Elliot Aronson whose primary contribution was to find a measure for achievement motivation which did not depend on verbalization. Aronson's attempt obviously pertained to my project. He wrote:

> Although the achievement motive has proved to be a useful concept in the prediction of a variety of behaviour, the verbal nature of the measure has rendered it difficult to apply to such problems as the need for achievement in young children, in certain extinct civilizations, and in many contemporary cultures. It has not been feasible to measure achievement motivation in young children because it is difficult to get them to write connected stories. Many ancient civilisations are beyond reach simply because they have left little or no written material which can be examined for the presence of achievement imagery. Differences in semantics have made it difficult to standardize the measure cross-culturally, and thus, the measurement of achievement motivation in cultures other than our own has not been practicable.[46]

Aronson also noted the possibility that high achievement-oriented subjects might not score well on the verbalized

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[46] E. Aronson, "The Need for Achievement as Measured by Graphic Expression," Motives in Fantasy, Action and Society, p. 249.

TAT because they suffer from special inhibitions when expressing achievement imagery, especially if they are anxious about possible failure. Other investigators[47] have questioned whether failure anxiety should qualify as achievement motivation, but we can readily conceive of more general situations where a subject with high achievement motivation might be less able to verbalize fantasy of any type as well as colleagues who are less motivated but more capable with words.

Aronson employed expressive "doodles" as his nonverbal examining technique. His test presents to subjects two abstract designs composed of basic "scribble patterns" which are to be "reproduced" on paper.[48] Since each design is shown for less than two seconds, any exact reproduction is impossible. The subject merely draws what he thinks was there. More precisely, he tends to draw not what he sees, but what he knows. As Aronson described his method and its principal result:

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[47] C. C. McArthur, "The Effects of Need Achievement on the Content of TAT Stories: A Re-examination," Journal of Abnormal and Social Psychology, vol. 48 (1953), p. 533.

[48] Aronson drew on A. H. Maslow's Motivation and Personality (New York, 1954) for his precept that "Expressive behavior has been considered more indicative of the underlying personality structure (i.e., less conscious, less situationally influenced) than problem solving or coping behavior. Thus it seemed particularly well suited to our purposes." ("The Need for Achievement as Measured . . . ," pp. 249-250.)

The types of doodles were described by Rhoda Kellogg (What Children Scribble and Why [San Francisco, 1955]) who wrote, "Art is of utmost significance and importance in this matter of communication. Being non-verbal, persons of all ages, times and cultures can react to it directly." P. 5.

> There were no particular hypotheses concerning the relation of n Achievement to graphic expression. The design of this study was to discover empirical relationships between n Achievement and various modes of graphic expression, and then to test the validity of these relationships in several cross-validating groups . . . the drawings of the 13 subjects above the median n Achievement score and of the 13 below the n Achievement score were segregated. A content analysis was then performed, i.e. the drawings were carefully examined for differences between the "highs" and the "lows." The major distinction perceived was that the drawings of the "highs" contained a preponderance of single, unattached, discrete lines, while those of the "lows" seemed more overlaid, fuzzier.[49]

There were other secondary correlations of high achievement motivation with particular forms of graphic expression. "Highs" tended to draw doodles (1) using more of the space provided and leaving smaller margins, (2) containing "more diagonal configurations," (3) showing more "S-shaped (two directional), nonrepetitive lines," and drawing "less multiwave lines (lines consisting of two or more crests in the same direction)."[50]

Aronson's investigations seemed objective in method (no preconceived hypotheses about the predicted response of high achievers dictated the choice or structure of his designs), but another problem, admitted by the author, casts doubt on the validity of the measure. ". . . We are forced to validate our measures on the basis of their correlations with

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[49] Aronson, op. cit., p. 252. Obviously, Aronson's samples are too small to read much importance into his data. One of my principal objectives was to employ adequate sample sizes.

[50] Ibid.

'n Achievement,'[51] which is admittedly an imperfect measure."[52] Aronson offers the following conclusions to explain the rather weak correlations of graphic and verbal measures.

> That the correlations are for the most part significant is a strong indication that the graphic expression test and the n Achievement test are measuring roughly the same thing. That the correlations are not larger than they are may be caused by the fact that the measures of graphic expression are not inhibited by anxiety the way the verbal measure may be.[53]

Through this test of graphic expression we have some measure of the characteristics of peoples' motions. The results can be recorded and studied at the examiner's leisure, an important convenience in field research which can be hindered by hasty examination of results while tests are in progress. From Aronson's results, we have some indication of how achievers behave, at least in America. "The drawings of the 'highs' suggest motion, are nonrepetitive, unrestricted in space, and economical in movement; those of the 'lows' seem to be immobile, restricted in space and redundant in movement."[54]

A contemporary study of adolescent boys in four societies has contributed mixed impressions of either verbal or graphic expression testing, as well as knowledge of the tre-

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[51] "Need for achievement" as measured by McClelland's TAT.

[52] Aronson, op. cit., p. 262.

[53] Ibid., p. 262.

[54] Ibid., p. 264. With some modifications, Aronson's hypotheses and scoring systems for doodles have been applied in some ingenious, though questionable, historical analyses.

mendous problems to be faced in cross-cultural research. McClelland's conclusions about this four-country project were that "as far as India was concerned, it was clear that the verbal n Achievement measure would have to be used." However, for Japan, Germany, and Brazil, the graphic expression measure "yielded far more significant relationships in accordance with theoretical expectations based on research in the United States."[55] Unfortunately, as McClelland explained, the results were clouded by great disparities in examination conditions and procedures.

One solution to these difficulties in cross-cultural testing, and to the more general question of whether verbal or graphic tests are more appropriate, was to try both among the Chagga. Two important considerations emerged during the background study for this project. First, the usefulness of cross-cultural measures will only be really proven by rigorous compliance to test instructions. Subjects in one society should receive no greater hints as to how they might respond than those in another. The test conditions should, if at all possible, remain unvaried.

At the same time, there are problems in Africa which can be solved only by the use of African assistants to give the tests, thus eliminating ethnic differences between tester and respondent. Also, tests must be redesigned so that they conform closer to the environment of the subjects. Only if

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[55] Ibid., p. 156.

those antithetical factors could be resolved might valid cross-cultural tests result. The doodle test, I hoped, would circumvent many of these problems.

Measuring Chagga values.. Although values and attitudes have been regarded as pervasive, enduring, and cross-culturally comparable traits of personality, in recent years attitude tests have been forced to compete with projective techniques for psychologists' attention. Some current writers have reasserted the importance of attitude study.[56] Because attitude interpretation and comparison is directly related to the study of economic change, I considered using some type of attitude test from the outset of my research. In the first place, before coming to any conclusive judgment of how the Chagga might differ from neighboring tribes in ways that might account for their greater economic success, their outlook toward each other, the challenges of life and of their environment had to be explored substantively. Also, contrasting their performance on attitude measures with the projective tests was bound to produce interesting data that might verify or reject previously accepted postulates about the best manner of comparing achievement oriented people with others. There is not enough information on non-Western cultures to allow conclusive statements about the value of a

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[56] William F. Dukes, "Psychological Studies of Values," Psychological Bulletin, vol. 52, no. 1 (1955), pp. 24-50. This article reviews earlier attitude tests and points out their relative merits.

particular form of testing. There is even considerable doubt about the value of projective testing in any environment. As Vernon has put the matter, variations in testing methods are not the only reason for doubting projective results:

> Recent work has shown that the projective techniques are unreliable also because responses are much affected by situational factors such as the subject's moods, his conception of the object of the test, and his reaction to the personality of the tester. . . . Responses to the present general tests derive from so many sources, situational, peripheral and central, and there is so large a subjective element in interpreting them, that one is forced to conclude that they should not be used for diagnosing the "total personality."[57]

What form of attitude measure was best for African conditions? The language problem was minimal among the students, but the group testing situation meant simple directions and a need for brevity. The individually-examined farmers might be tested more extensively, but would be less likely to handle an attitude test full of difficult words. Nor could I overlook the desirability of a cross-culturally applicable measure. As with the projective tests, these two criteria of (1) appropriateness and (2) cross-cultural appliability worked in opposite directions.

The most proven and respected attitude survey tools, although highly desirable for the fulfillment of the cross-cultural criterion, because of their previous popularity among "Western" subjects, disqualified themselves because of

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[57] P. E. Vernon, Personality Assessment: A Critical Survey (London, 1964), pp. 13, 14. Vernon notes, however, that projective tests designed to "elicit some particular motive or attitude . . . have considerable value in experimental and developmental studies of motivation." P. 14.

their length, difficult vocabulary and attendant translation problems, and administrative complications. The Allport-Vernon "Study of Values"[58] was designed for college students and obviously requires a high degree of verbal competence unavailable even in the bulk of the Western populations. Thurstone's Scales[59] are closely related to Western life (as are some of the Allport-Vernon items) and would require substantive changes that would destroy cross-cultural uniformity.[60]

But certain features of these widely-used tests did seem desirable for my project. Interpretation of attitudes had to be in the form of quantifiable "loadings" which could be compared with results from other tests. Strong correlation between certain of the behavioral measures with a particular type of attitude, or with a measure of actual level of achievement, might lead to an overall factor analysis and a general picture of the psychological composition of an innovative Tanzanian sub-culture. For the attitude test to be

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[58]Gordon W. Allport and Philip E. Vernon, "A Test for Personal Values," Journal of Abnormal and Social Psychology, vol. xxvi, no. 3 (October-December, 1931).

[59]L. L. Thurstone, The Measurement of Values (Chicago, 1959).

[60]Still other attitude measures were not used for the following reasons. L. W. Harding, "A value-type generalizations test," Journal of Social Psychology, vol. 19 (1944), pp. 53-79, is not directly related to economic attitudes, but is instead politically oriented. To give another example, The University of California "attitude inventory" Form D is more clinically oriented, and would have to be drastically altered, as would the Cattell 16 Factor Personality Test (Institute for Personality and Ability Testing, Chicago).

appropriate to my research, it had to produce factors related to economic behavior, as well as clusters of those attitudes that hinder attitude change.

Varieties of attitudes. Investigators have categorized attitudes according to body types,[61] operative or conceived values,[62] varieties of value,[63] psychophysical stages of development,[64] and other criteria.

After studying the available test materials, Morris' "Paths of Life"[65] was chosen for (1) its brevity and potential practicality among Africans, and (2) the extensive cross-cultural work already completed by Morris himself. The 13 "Ways to Live," each scored by subjects according to a seven-point preference scale, hypothetically differentiate between three basic personality types, which are explained below.

promethian. The dominant man, interested in active control of environment; the "doer" who "makes things happen."

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[61] William H. Sheldon, The Varieties of Human Physique (New York, 1940).

[62] Thurstone, op. cit. R. B. Cattell, "16 Factor Personality Test," Personality and Motivation Structure and Measurement (New York, 1957). Both of these measures would be difficult for lower educational levels, and bias even results among college students in favor of those studying humanities. (See Charles Morris, Varieties of Human Value [Chicago, 1956], pp. 12-14.

[63] F. Kluckhohn and F. Strodtbeck, Varieties in Value Orientations (New York, 1961).

[64] The writings of "Neo-Freudians."

[65] C. Morris, Paths of Life (New York, 1942), and Varieties of Human Value.

dionysian. The dependent man; receptive, responsive, relaxed, emotionally warm, and satisfied to "let things happen."

buddhistic. The detached man; restrained, self-controlled, self-aware: the "perceiver" who "watches things happen."

By Morris' theory any of seven combinations of these three basic components of human personality are hypothetically possible according to the relative strength of all three in any individual.[66]

Where:

b>p>d--Buddhistic p>b>d--Apollonian d>p>b--Mohammedan
b>d>p--Christian p>d>b--Promethian d>b>p--Dionysian

Where:

d = p = b--Maitreyan[67]

When administered, the "Ways to Live" is composed of 13 paragraphs of around one hundred words each. For my research in Tanzania, only the shortened version of each Way was offered in written form to subjects, while the longer explanation, a method necessitated by the widely differing (and therefore disruptive) capabilities of the subjects to read through such a long document. The original shortened versions and the hypothetically strong ties to value-types are

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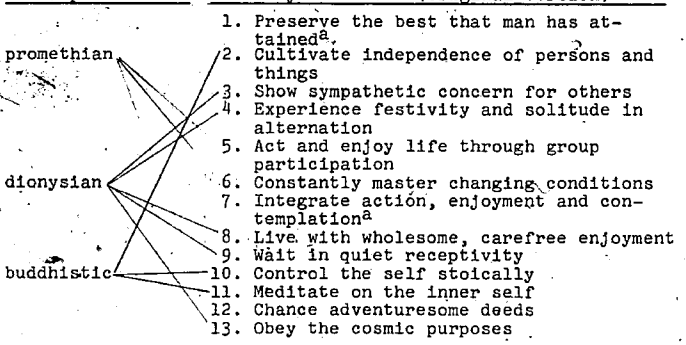
[66] Morris, Varieties of Human Value, Ch. 1.

[67] Morris ignored further possible clarification of value profiles, considering only the 6 pure rank-order cases and the one of equally-preferred values. For a discussion of "linked Second-order Types," see Kluckhohn and Strodtbeck, op. cit., pp. 20-25.

Morris' use of "Maitreya," one of the bodhisattra in line after Gautama in the theory of recurring Buddhas, is not explained in his writings.

as follows.



[a]No strong factor loadings toward p, d, or b

B. Scoring Systems and Reliabilities

Scoring was mechanical in three of the tests given in this study, and interpretative in three others. Time metaphor, color preference, and the "Ways to live" values test were all scored according to identical affect scales.

5 I like it very much
4 I like it slightly
3 I am indifferent to it
2 I don't like it too much
1 I dislike it very much

The original versions of all of these tests are accompanied by more complex affect scales. Morris, for example, employed a 7-point scale. Two pre-testing situations,[68] fol-

[68]Kibaha School, Dar es Salaam, and University College, Dar es Salaam.

lowed by a period of rewording suggestions from students at University College, Dar es Salaam, led to the conclusion that a 7-point scale was inadvisable in Tanzania. (Many argued in favor of a 3-point scale.)

None of these three measures was jeopardized by interpretation problems, as all subjective decisions and evaluation hypotheses were made when the test was created. Therefore, "coding" is not necessary. From that standpoint, naturally, this type of test offers an advantage for cross-cultural research by many different scholars. The three remaining tests must be considered more closely from the standpoint of scoring technique and reliability.

Scoring the TAT. Two scorers analyzed the TAT results according to the system devised by McClelland and his associates[69] with only one modification; the addition of a category for "nation-building" thema. Reading the results, both scorers were struck by the large number of stories dominated by "build the nation" imagery, which certainly connoted a type of achievement, but did not qualify as achievement task

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[69] J. W. Atkinson, et al., "Scoring Manual for the Achievement Motive," Motives in Fantasy, Action and Society (Princeton, 1958), pp. 179-204. Both scorers achieved nearly the stated "desirable" levels of correlation with the expert scoring that accompanies the practice materials connected with the scoring manual. For seven sets of practice stories, rho =

	A	B	C	D	E	F	G
Scorer 1	.88	.82	.87	.84	.80	.81	.84
Scorer 2	.89	.86	.90	.82	.74	.66	.70

The "Manual" states that rho of .90 or above is "desirable," but .80 is adequate for research. P. 691.

imagery related to the individual actions of characters in the story. After consultation with McClelland, the scoring category for "achievement task" imagery was altered to include any mention of nation-building goals and problems. This affected the relationship between "unrelated" and "achievement task" scoring categories by elevating the nation-building stories into the latter. This change did not eliminate the necessity to show personal involvement or need to achieve in order to score well on the test.

After deciding on this scoring change, inter-scorer reliability was checked by rank-order correlations of results from one-third of the entire Chagga sample (the first 33 of each 100 subjects' TAT responses). Inter-scorer correlations ($N = 330$) were .85 ($p < .01$) and .91 ($p < .001$) for Pictures 1 and 2. However, inter-scorer agreement fell off considerably with Pictures 3 ($r = .73$, $p < .05$) and 4 ($r = .66$, $p < .05$), because of the difficulty in determining whether a story mentioning "the well-drawn picture" or "the art treasure" qualified as real empathy on the part of the subject. Two decisions were made on the basis of (1) inter-scorer reliability and (2) scorer effectiveness measured by comparison with expert scoring of the Manual for achievement motivation practice materials. First, results from only one of the two scorers, having shown greater scoring proficiency, were to be employed for the comparative analysis with results of other tests and measures of actual achievement. Second, weak inter-scorer agreements on TAT pictures 3 and 4 was to be

kept in mind in assessing the value of results from those responses. If the weak inter-scorer correlations were found to correspond with drastically reduced levels of achievement-related imagery in the responses, the protocols, though methodologically significant, would be useless for the immediate substantive problem of achievement motivation measurement.

The Sentence Completion Test. The scoring system for measuring achievement motivation through Sentence Completion was developed by Morrison from the McClelland TAT Scoring Manual. Samples of the Tanzanian responses, with scoring categories explained, follow:

Scored "zero" (Response unrelated to achievement goals)
I felt most dissatisfied with anything that is unlawful.
A twenty acre farm is enough for me.
If I became partially disabled, I would feel sorry for myself.

Scored "one" (Implicit achievement-performance)
To get ahead in farming today, one must work hard.
A farmer today should increase his acreage.
I lack enough brains.

Scored "two" (Explicit achievement-performance)
To grow 100 lbs. of coffee per acre, one must increase his effort.
A farmer today should make an effort ("jasho"--literally "sweat").
The ideal man is one with physical strength and capacity for hard work.

Scored "three" (Stated need to achieve)
A good farmer is the one we should try to be like.
The ideal man is a person who tries to work successfully.
A good farmer is a man who tries to work with all the energy he has.

Inter-scorer reliabilities proved extremely high for the results from 61 Chagga farmers who took the Sentence

Completion test ($r = .96$, $p < .01$). Therefore, averaged results of the two scorers were used for the comparative analysis.

The Graphic Expression Test. Outside of the TAT, the Graphic Expression Test presented more scoring and reliability problems than any other measure used. Aronson's scoring system appears to be highly arbitrary. A figure for total discreteness (or fuzziness) is obtained, complemented by measurements of space employed for the doodles. Three other of Aronson's variables which his results showed to be of less value were not scored for Tanzanian subjects.[70]

Aronson assures us that the "scoring system can be used reliably," and learned in a short period of practice.[71] This proved to be true, as I achieved a score-rescore correlation after six months ($N = 100$) of .91, but I found some difficulty employing the scoring procedure. I discovered that some of the instructions failed to convey enough technique to put the scorer's mind completely at ease. Some of the students' doodles were so messy that it was impossible to tell "whether the lines are attached at the ends (fuzzy) or not (discrete)." This problem was not conveyed by the practice materials, which were all neat, well-spaced, and uncluttered. An important problem arises from this difficulty.

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[70] These are Diagonal Configurations, S-shaped lines, and Multi-waved lines. Aronson, op. cit., pp. 259-262.

[71] Ibid., p. 257.

While one can usually determine whether a response is predominantly fuzzy, it is difficult to quantify the number of separate fuzzy scribbles on a messy paper.

IV

RESULTS

In Section A of this chapter, the student test results are examined for important descriptive features of each measure. Section B deals with measures of interrelationship between the tests taken by the students. Sections C and D examine results from value and sentence completion measurement, where farmers provided the main source of data.

A. Tanzanian Student Performance on Achievement Motivation Tests

Table 2 shows the students' performance on five achievement motivation tests. The three groups did not vary significantly on these five measures, as Table 6 makes clear. However, there were several cases of significant differences between mean scores, and these are noted in the five subsections that follow.

TAT Performance. The TAT results did not show any indication of important capability to differentiate between the three student groups. There was a significant difference between Chagga and Bondei ($t = 3.05$, $p < .01$)[1] with the Chagga

[1] Two-tailed test applies to all references to t in this study, in view of the extremely tentative nature of the research. Unless otherwise stated, all correlations are Pearsonian.

TABLE 2

STUDENT PERFORMANCE ON TESTS FOR ACHIEVEMENT MOTIVATION: MEANS AND STANDARD DEVIATIONS FOR CHAGGA, BONDEI, AND ASIAN SUBJECTS

	TAT for Achievement Motivation		Tartan Color Preference		Time Metaphors		Graphic Expression: Discrete-Fuzzy		Graphic Expression: Space Used	
	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s
Chagga N = 924	3.1	2.1	0.2[a]	7.3	0.1[b]	4.3	15.8[c]	15.1	21.3[c]	8.2
Bondei N = 89	2.4[d]	1.3	[e]		1.1	4.5	12.2	11.3	20.3	8.0
Tanzanian Asians N = 67	2.9	1.5	1.0	7.0	0.3	4.8	11.9	10.5	16.5	6.9
(actual scoring range)	11.0		15.0		9.0		75.0		22.5	

[a] N = 798

[b] N = 903

[c] N = 909

[d] N = 88

[e] Bondei did not take this test.

students, as expected, showing more achievement motivation imagery. This difference is not supported by the other Chagga-Bondei comparative test results. Table 3 shows the differences in performance on the four TAT pictures.

TABLE 3

TAT RESPONSES IN THREE MAIN SCORING CATEGORIES

	Story 1 (photo)	Story 2 (photo)	Story 3 (drawing)	Story 4 (drawing)
Achievement Imagery	78 (29%)	97 (36%)	41 (15%)	41 (15%)
Task Imagery	167 (62%)	159 (59%)	94 (35%)	175 (65%)
Unrelated Imagery	25 (9%)	14 (5%)	135 (50%)	54 (20%)
	270	270	270	270

These differences in performance are not difficult to explain. The photographs could only be construed as people similar to the subjects themselves, parts of the same culture, time period, and circumstances. With the drawings, although adapted from Murray's original test which has had years of serviceability for Western culture, several reactions other than identification with characters in the picture were possible. Examples of three extreme reactions from Chagga students are the following:

> (a response to Picture 3.) Two people are just looking around without anything to do. They might have not eaten anything for the last three days. They are thinking that the Mwalimu Nyerere will order some corn from the United States for feeding them. If they continue missing food,

they will die after two days from now. But if they are given food and are alright again, they will be quite willing to work hard and build our nation.

(a response to Picture 3.) The bones of the head are being shown from the historian's pictures. These are people who lived many hundreds of years ago. They are thinking how the present people compare themselves with the ancient people. People will know how the human race changes in size, appearance and in progress from time to time.

(a response to Picture 4.) Some artists are drawing pictures of doctors working in the hospital which can give good imagination to the people and improvement to the doctors. They are thinking that by more improvement the country will develop. Many people will enjoy it.

Because of the interscorer disagreement on scoring the two drawings, TAT pictures 3 and 4 were not considered in the analysis, which proceeded on the basis of the two photographs alone. Table 3 shows that the photos evoked ample achievement imagery. With the two pictures, empathy (and resultant achievement motivation imagery) declined ($x^2 = 362.4$, $p < .001$) in favor of description and concern with the artistic details of those two drawings, which resulted in frequent unrelated or task imagery.

Results of the Tartan Color Preference Test. Chagga students demonstrated no preference for either somber (passive) or bright (active) tartans, as Table 4 illustrates. Consider the 8 tartans which correlated most (4) and least (4) with TAT-measured Achievement Motivation in Knapp's Data. (Table 4, Numbers 15, 20, 3, 13, 7, 19, 5, 2.) Chagga subjects actually preferred active tartans ($\bar{x} = 3.34$) over passive ones ($\bar{x} = 3.25$). No data were obtained from Bondei

TABLE 4

PERFORMANCE ON EACH ITEM OF TARTAN TEST FOR COLOR PREFERENCE

Presented as No.	Passive or "Ground" Tartans	Description[a]	Knapp's Correl. with n Ach[a]	Mean Scores Chagga[b] $\bar{x}$	Chagga[b] s	Asian[c] $\bar{x}$	Asian[c] s
15	Campbell of Broad-albane	Subdued blue-green with fine small yellow lines, open design.	.18	3.4	1.4	3.3	1.3
20	Elliot	Predom. deep blue with dark open figure, very fine brown line.	.18	3.1	1.5	3.7	1.4
3	Anderson	Complex, fine-textured asymmetrical with many colors but predom. light blue.	.17	3.2	1.3	3.3	1.3
13	MacDonell of Glengarry	Somber fine-texture predom. black and brick-brown	.15	3.2	1.5	3.3	1.5
4	Macpherson Hunting	Fairly open grey-black with inconspicuous brick-red grill.	.08	2.9	1.4	3.2	1.4
9	Cameron of Erracht	Predom. green-black, fine texture, brown-yellow overlaid grill.	.08	3.4	1.4	3.1	1.5

[a] As described in Knapp, p. 369 f. Refers to Spearman's r.

[b] N = 798.

[c] N = 67.

(continued on next page)

Table 4 (continued)

Presented as No.	Passive or "Ground" Tartans	Description[a]	Knapp's Correl. with n Ach[a]	Mean Scores Chagga[b] $\bar{x}$	Chagga[b] s	Asian[c] $\bar{x}$	Asian[c] s
14	Ogilvie	Bright orange and blueish green, highly complex, fine texture, asymmetrical.	.07	3.8	1.4	3.6	1.3
16	Clergy	Very somber, deep blue and green.	.07	3.2	1.4	3.0	1.6
17	Ancient Sutherland	Predom. blue-green, faitly open, with brick brown and white grill overlay.	.07	3.2	1.3	3.3	1.4
11	Oliphant	Open, asymmetrical, blue-green, with black and white grill overlay.	.07	2.8	1.4	2.9	1.4
			Average of means	3.2		3.3	

Presented as No.	Active or "Figure" Tartans	Description	Knapp's Correl. with n Ach	Mean Scores Chagga-1 $\bar{x}$	Chagga-1 s	Asian-1 $\bar{x}$	Asian-1 s
7	Drummond	Predom. bright red, moderately fine textured, some green.	-.20	3.3	1.3	2.8	1.5
19	Hay	Like Drummond, but slightly less red.	-.20	3.4	1.3	3.3	1.5

(continued on next page)

Table 4 (continued)

Presented as No.	Active or "Figure" Tartars	Description	Knapp's Correl. with n Ach	Mean Scores			
				Chagga-1		Asian-1	
				$\bar{x}$	s	$\bar{x}$	s
5	Sinclair	Predom. red, monotonously symmetrical, open design, secondary green.	-.16	3.3	1.4	3.0	1.6
2	Brodie	Predom. bright red laced with dramatic black and yellow powerful contrasting design.	-.14	3.3	1.3	3.3	1.5
6	Cumming	Predom. green, secondary bright red, fairly fine design, peculiar mossy texture.	-.13	3.1	1.4	3.2	1.4
18	Stewart	Predom. bright red-brown, white and blue-grey inconspicuous grills.	-.12	3.7	1.3	3.3	1.5
8	Barclay	Bold, open yellow and black with strong contrast.	-.12	2.8	1.5	2.8	1.6
10	Ramsay	Bold open red and black, very open design, striking contrast.	-.09	3.2	1.4	3.1	1.5
1	Balmoral	Light grey, fine texture, red and black overlay grill.	-.07	2.8	1.6	3.6	1.5
12	Steward of Appin	Predom. red, secondary green, moderate complexity and asymmetry.	-.07	3.2	1.4	3.5	1.4
			Average of Means	3.2		3.2	

students, but the Asian sample for the same 8 tartans showed a preference for the somber ($\bar{x}$ = 3.40) over the bright ($\bar{x}$ = 3.09). The differences between Chagga and Asian mean scores was not significant.

Time-Metaphor test results. These data are also inconclusive. As Table 2 showed, only the Bondei demonstrated a preference for either fast or slow metaphors. According to the hypothesized preference directions, the Bondei should have been the least likely to prefer rapidly moving time imagery. However, none of the differences between means proved statistically significant ($p > .05$).

TABLE 5

TIME-METAPHOR SCORES: THREE STUDENT GROUPS

"Fast" Metaphors	Presented as Number	Chagga		Bondei		Asian	
		$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s
1. a fleeing thief	2	2.7	1.4	2.9	1.4	3.1	1.4
2. a roaring river	5	2.5	1.4	3.0	1.4	3.0	1.6
3. a bird in flight	7	3.4	1.4	3.3	1.4	3.5	1.4
4. a speeding bus	8	3.3	1.5	3.3	1.5	2.7	1.5
		3.0		3.1		3.1	
"Slow" Metaphors							
5. a vast expanse of sky	1	2.8	1.5	2.5	1.5	2.7	1.6
6. a large revolving wheel	3	3.4	1.4	3.5	1.3	3.0	1.4
7. drifting clouds	4	3.1	1.3	2.9	1.2	3.2	1.4
8. a quiet motionless ocean	6	2.8	1.5	2.3	1.4	3.0	1.5
		3.0		2.8		2.9	
		N = 903		N = 89		N = 67	

Among the two African samples, one "slow" metaphor was highly preferred. "A large revolving wheel," which may have been antithetical to n Achievement among American students because of its lack of direction rather than lack of speed, refers back to the question of African cultural concepts of design, and to the prevalence of circular and elliptical forms.

Results from Graphic Expression Testing. No significant difference between Chagga and Bondei student performance emerged from this test ($p > .05$). Space employment for the designs did discriminate between the two African groups, on the one hand, and Asians.[2] Asians used more space for their designs; the Africans were more parsimonious, therefore scored higher on this variable (unused space was counted). According to Aronson's hypotheses, a low score should correlate with high achievement motivation.

The first stimulus design is predominantly fuzzy, the second mostly discrete. However, although the two designs are basically different, according to Aronson's hypotheses high achievers would perform similarly in response to both stimuli since they had no real way of obtaining an exact mental picture of either. This is precisely what happened. Whatever the test was measuring, it evoked similar responses from many subjects for each of the two pictures. For discreteness/fuzzyness, the product-moment correlation of Design

[2] Chagga--Asians ($p < .001$); Bondei--Asians ($p < .01$).

1 to Design 2 was .35 (N = 1079, $p < .001$). For the amount of space used on each response (same N) the correlation was .64 ($p < .001$).[3]

B. Student Intercorrelations for Achievement Motivation Tests

Table 6 demonstrates the lack of correlations among tests which were designed to discriminate between subjects with high or low achievement motivation. Under American conditions, these tests had given grounds for belief in their effectiveness. But the Tanzanian results bring into question their cross-cultural utility.

TABLE 6

PEARSONIAN CORRELATIONS AMONG FIVE ACHIEVEMENT MOTIVATION TESTS: CHAGGA STUDENTS

			Graphic Expression Test	
	Tartan Test	Time Metaphors	Dis/Fuz	Space
TAT 1 & 2	.11[a] N = 794	.01 N = 898	.01 N = 904	-.04
Tartan		-.01 N = 786	-.04 N = 779	.05
Time			-.06 N = 884	-.06
Dis/Fuz				-.13[b] N = 908

[a] ($p < .01$) [b] ($p < .001$)

[3] The most interesting Tanzanian result on Aronson's test is the strong relationship between Dis/Fuz and Space Employed. This confirmed Aronson's own evidence that subjects who doodle with purpose and discreteness use more space within the time limit. (The score for space is achieved by counting centimeters of unused space, accounting for the negative predicted correlation.)

C. Relationships Between Test Results and Measures of Actual Achievement.

If the students' economic attitudes reflected the degree of actual economic success experienced by their families, and if any of the tests were effective methods of measuring achievement motivation among Chagga, test scores would have correlated with coffee production. These correlations were not significant. ($p > .05$. See Table 7.)

TABLE 7

PEARSONIAN CORRELATIONS, COFFEE PRODUCTION WITH ACHIEVEMENT MOTIVATION TEST RESULTS

				Graphic Expression	
	TAT	Color Pref.	Time Metaphors	Discrete vs. Fuzzy	Space Used
Coffee Production of Family	.03 N=319	.01 N=278	.05 N=311	-.01 N=312	-.10

Student Grades and Achievement Motivation. Most of the protocols obtained during the development of Achievement Motivation tests in the United States were compared with scholastic performance as the Subject's measure of actual achievement. The possible weakness of assuming that high scholastic performance will correlate with subsequent economic achievement was pointed out in Chapter II. Table 8 casts doubt on the tests' ability to distinguish between achievers and non-achievers even in a scholastic environment.[4]

[4] Data were kept separate for each class because of teachers' differences in rating students and coming to final

TABLE 8

RANK ORDER CORRELATIONS: SCHOLASTIC PERFORMANCE AND ACHIEVEMENT MOTIVATION TEST RESULTS
(27 Classes in 4 Kilimanjaro Region Schools)

Direction of Significant r	Number of classes where r significant ($p<.05$) ($N>17$, <60)									
	TAT		Color Pref.		Time Metaphor		Graphic Expression			
							D-F		Space	
	$p<.05$	$p<.01$	$p<.05$	$p<.01$	$p<.05$	$p<.01$	$p<.05$	$p<.01$	$p<.05$	$p<.01$
Predicted	1	2	0	0	2	0	0	0	1	3
Opposite	0	0	0	0	1	1	2	2	1	0

These results were obviously disappointing. In defense of the tests, one might argue that the American universities, where earlier validation of these measures took place, served as more accurate estimators of student achievement and that grades were more truly representative indicators of achievement motivation. However, after considerable classroom exposure and ample acquaintance with teachers at three of the four schools on Kilimanjaro, I was convinced that the learning process, as well as student evaluation techniques, were considerably closer to our own modern methods than to rote-learning usually epitomized by Koranic education. Considering the crowded conditions, I was impressed by the accomplishments of those schools and their highly-motivated and modern staff. There was little reason to fear that rankings of actual scholastic achievement would be inaccurate enough to destroy their value as a comparative measure.

Table 9 presents the basic results of the "Paths of Life" Test, and Table 10 indicates the similarity of Tanzanian attitudes to those of Indian and Chinese students examined by Morris. Rankings of "Ways" according to preference were not as similar to Morris' Japanese and American results. This was not unexpected after the lack of achievement motivation in the Tanzanian sample of projective material. Morris

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term grades. Some placed more importance on factual knowledge in short answer tests, some on class interest; some teachers were American, others English or Tanzanian.

TABLE 9

RESULTS ON "PATHS OF LIFE" TEST: STUDENTS AND FARMERS

Ways to Live (as employed in Tanzania)	Chagga Students N = 882		Chagga Farmers "Best" Farmers N = 31		Chagga Farmers "Worst" Farmers N = 30		Asian Students N = 67	
	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s	$\bar{x}$	s
1. preserve the best that man has achieved	3.9	1.3	4.9	.2	4.8	.8	3.9	1.2
2. try to be independent of people and things	2.8	1.5	4.4	1.4	2.7	2.0	3.3	1.4
3. show sympathetic concern for others	3.9	1.2	5.0	.0	5.0	.0	4.0	1.1
4. experience gaiety and Lonely quietness alternately	2.0	1.2	3.6	1.7	3.0	1.8	2.3	1.2
5. act and enjoy life through participation with other people	4.3	1.1	5.0	.2	5.0	.0	3.8	1.3
6. constantly overcome changing conditions	3.2	1.3	3.4	1.8	3.1	1.0	3.4	1.3
7. include in your life action and enjoyment, together with deep thought	3.4	1.4	5.0	.2	4.8	.5	3.9	1.4
8. live with carefree, healthy enjoyment	3.2	1.5	5.0	.2	4.7	1.0	3.8	1.2
9. be willing to patiently accept whatever may happen	2.7	1.4	2.5	1.7	3.1	1.9	3.3	1.4
10. control oneself without complaining	3.4	1.3	4.4	1.3	4.1	1.6	3.1	1.4
11. think about the reasons for one's own nature and thoughts	3.1	1.4	4.1	1.2	3.8	1.1	2.9	1.3
12. try doing daring and adventuresome things	3.0	1.4	4.9	.4	5.0	.0	3.8	1.4
13. obey what seems to be the natural order of things in the world	3.6	1.4	4.5	.8	4.2	1.2	3.6	1.3

TABLE 10

COMPARATIVE PREFERENCE FOR "WAYS TO LIVE": RANK ORDER CORRELATIONS, N-13

Tanzanian Subjects			Morris' Original Subjects				
"Best" Chagga Farmers	"Worst" Chagga Farmers	Tanzanian Asian Students	Indian Students	Japanese Students	American Students	Chinese Students	
.76	.73	.79	.76	.42	.35	.72	Chagga Students
	.87	.87	.57	.32	.51	.44	Best Chagga Farmers
		.77	.55	.39	.46	.49	Worst Chagga Farmers
			.65	.49	.66	.57	Tanz. Asian Students
				.81	.64	.63	Indian Students
					.57	.41	Japanese Students
						.42	American Students

noted that his Chinese and Indians were highly concerned with problems of national development, but less likely to be motivated by personal achievement ambition than were their American and Japanese counterparts.

Factor analysis of the "Ways to Live" produced the following factors, which derive from Table 11.[5]

TABLE 11

FACTOR ANALYSIS OF PATHS OF LIFE: CHAGGA STUDENTS

Ways to Live	F_1	F_2	F_3	F_4	F_5
1	-.26	.04	-.39	-.19	.03
2	-.17	.00	.62	.33	.14
3	-.52	.06	-.19	-.23	.30
4	-.10	.03	.61	-.13	.01
5	-.22	.02	-.52	.21	.13
6	-.70	-.06	.04	.15	.01
7	-.05	-.15	-.04	-.41	.57
8	.01	-.04	-.03	.73	-.07
9	.04	.68	.14	-.24	-.03
10	-.46	.43	.10	-.16	-.24
11	-.32	-.46	.00	-.33	.02
12	-.03	.09	.04	.07	.82
13	-.12	.60	-.19	.16	.11

F_1 (9.6% contribution to variance of all variables)
Way 6 Constantly overcome changing conditions
Way 3 Show sympathetic concern for others
Way 10 Control ones-self without complaining
Way 11 Think about the reasons for one's own nature, and thoughts
(all negative loadings)

[5]Factor analysis (Verimax Solution--Rotated) was performed on the results from the Chagga students. The other groups were not large enough to make such analysis trustworthy.

F_2 (9.7% contribution to variance of all variables)
- Way 9 Patiently accept whatever may happen
- Way 13 Obey what seems to be the natural order of things in the world
- Way 10 Control oneself without complaining
- Way 11 (negative) Think about the reasons for one's own nature and thoughts

F_3 (10.0% contribution to variance of all variables)
- Way 2 Try to be independent of people and things
- Way 4 Experience gaiety and lonely quietness alternately
- Way 5 (negative) Act and enjoy life through participation with other people
- Way 1 (negative) Preserve the best man has achieved

F_4 (9.3% contribution to variance of all variables)
- Way 8 Live with carefree, healthy enjoyment
- Way 2 Try to be independent of people and things
- Way 7 (negative) Include in your life action and enjoyment, together with deep thoughts
- Way 11 (negative) Think about the reasons for one's own nature and thoughts

F_5 (9.2% contribution to variance of all variables)
- Way 12 Try doing daring and adventuresome things
- Way 7 Obey what seems to be the natural order of things in the world

Important features of the Factor analysis are (1) the failure of any one or two factors to account for much of the total variance and (2) fuzziness of the factors themselves. The second feature may be extremely significant for understanding the projective test results cited earlier within the context of Chagga child training features and the agricultural-pastoral dualism of Chagga social structure. Morris' American results produced the following clearly defined factors.[6]

A. Social Restraint and Self-Control
   Ways 1, 10--4 (negative)
B. Enjoyment and Progress in Action
   Ways 12, 5, 6--2 (negative)

[6]Morris, Varieties of Human Value, Ch. 2.

C. Withdrawal and Self-sufficiency
Ways 11, 2, 9--5 (negative)
D. Receptivity and Sympathetic Concern
Ways 13, 9, 3
E. Self-Indulgence (or Sensuous Enjoyment)
Ways 8, 4--10, 13 (negative)

The Chagga factors are more confused. F_1 seems dominated by Mastery over the environment (Way 6), but is also strongly loaded toward social, stoic, and contemplative values. F_3 finds active, social participation contradicted by independence (Way 2) and the ambivalent Way 4. F_5 is also beset by internal contradiction. Of the two consistent factors, F_4 comes closest to describing the Chagga outlook, or at least the carefree, indulgent Chagga ways which are most easily and frequently observable.

D. Sentence Completion by Chagga Farmers

Table 12 shows the Sentence Completion results. The difference between the combined mean for the "Best" farmers ($\bar{x} = 7.0$) and "Worst" farmers ($\bar{x} = 5.5$) was not significant. Nor did the results display a significant trend--only eight of the twelve items conformed to the expected pattern. An analysis of internal consistency indicates two items that deserve further testing. Only items one and eight gave a clear indication of any differences in achievement motivation between the two farmer groups distinctly identified by their peers as "Best" and "Worst."[7]

[7]While these two items, however, are more directly relatable to economic achievement than, for example, items 4, 5, 6, 7, 9, 10, they are comparable to items 2, 3, 11, and 12, which produced insignificant results.

TABLE 12.

SENTENCE COMPLETION RESULTS OF CHAGGA FARMERS

Sentences adapted from Neill and Rogers, Measuring Achievement Motivation among Farmers	"Best" Farmers N = 31		"Worst" Farmers N = 30	
	$\bar{x}$[a]	s	$\bar{x}$	s
1. A farmer today should...	1.26	.8	.63	.7
2. A good farmer...	.84	.9	.93	.7
3. A twenty acre farm...	.74	.7	.83	.6
4. The ideal man...	.48	.8	.37	.6
5. I used to daydream about...	.39	.7	.27	.6
6. I felt most dissatisfied with...	.16	.4	.17	.4
7. Most of all I want...	.45	.8	.30	.6
8. To grow 100 lbs. of coffee per acre one must...	1.45	.7	.93	.9
9. If I became partially disabled, I would...	.16	.6	.00	.0
10. I lack...	.13	.3	.10	.3
11. What my farm lacks is...	.32	.5	.17	.4
12. To get ahead in farming today one must...	.68	.7	.80	.9

[a]Scores from zero to 3.0 were possible according to the presence and strength of achievement motivation imagery.

V

DISCUSSION

This research has shown no indication that achievement motivation testing can be productive in Tanzania. The test results correlated neither with scholastic and/or economic achievement nor with each other. Two general explanations for these negative results are possible.

> Hypothesis A: Achievement motivation and other persist- and psychological differences distinguishing Chagga from other tribes do exist, but were not measured by the tests that were employed. The test results are not valid.
>
> Hypothesis B: The test results are valid, and achievement motivation differences between the three tribal groups of students and the two groups of Chagga farmers are negligible. Therefore, actual achievement differences must be explained by other factors.

In spite of efforts to make the tests appropriate for Tanzanians, extraneous factors may have hindered effective measurement of achievement motivation and economic attitudes. McClelland's TAT examines not only achievement motivation, but also (1) the subject's ability to write legibly, quickly, and expressively; (2) his capacity to remain undistracted by fellow subjects, the test administrator, the projectionist and his equipment, and other situational factors. The TAT for achievement motivation has not been universally acclaimed

as a valid measure.[1] The other tests that were employed may also have been affected by administrative problems, as well as possible theoretical defects. Practically all present projective measures of achievement motivation were derived theoretically from McClelland's test, and have achieved credence through correlations among American subjects with the original McClelland TAT. Negative results among Tanzanians might mean yet another reason for doubting the whole family of achievement motivation tests. Administrative reasons for questioning the effectiveness of the TAT pertain especially to research in Africa. The test imposes time limits which, although intended to produce uniform conditions, may favor certain subjects over others. Facility with words might mean as much as the subject's level of achievement motivation.

Sentence completions are also subject to extraneous

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[1] Child, Frank and Storm attacked McClelland's test and scoring methods, concluding that "The overall quantitative score of achievement motive shows virtually no relation to the self-ratings of achievement tendency or of anxiety about achievement." ("Self-Ratings and TAT: Their Relationships to Each Other and to Childhood Background," Journal of Personality, vol. 25 [1956-1957], p. 107.) These authors concur generally with Allport's preference for direct methods. (G. W. Allport, P. E. Vernon and G. Lindzey, Study of Values: Manual of Directions [Boston, 1951], p. 4, and also P. E. Vernon, Personality Assessment: A Critical Survey [London, 1964], Ch. 10.)

Child, Frank and Storm note that the reliability of the group TAT is lower "than one ordinarily hopes for even in group research instruments and is far lower than the reliability of self-rating questionnaires such as we have also used in trying to measure the same variable. (Ibid., p. 104.) McArthur reported that, in separate tests which he had performed to examine McClelland's hypotheses, fully half of the latter's results were proven to be merely "artifacts of his experimental design." ("The Effects of Need Achievement on the Content of TAT Stories: A Re-Examination," Journal of Abnormal and Social Psychology, vol. 48 [1953], p. 536.)

factors. They require quickness of mind and verbal ability, although the farmers were given no arbitrary time limit. Instructions have a bearing on any projective measure and must elicit the subject's interest. In a test given individually, lack of administrative uniformity may bias results or inhibit achievement motivation imagery. In addition, from the dozen items on the Sentence Completion scale, some may be less appropriate than others.

Graphic Expression scores (particularly Space Employed) may depend largely on such factors as the writing comfort and temporary disposition of the subjects. Only the Graphic Expression test evoked amusement which may have diverted attention from the test itself. This problem of diverted attention stems from the general lack of exposure to modern psychological testing. American students grow up among a maze of blocks, phrases, and ink blots, which they come to accept and find interesting even though the purposes of the various tests may not be understood. In areas of the world where this experience has not been widespread, cross-cultural psychological testing faces a difficult obstacle. Neither modification/simplification of instructions nor adaptation of tests to local conditions can overcome test novelty to Tanzanians.

Time metaphors, in particular cases, could contain culturally unpleasant items that endanger their time expressiveness. As the results showed, research into time-sense geometry--i.e., rectilinear versus circular--might amplify

the performance on "a revolving wheel." Lack of lineal direction caused this item to correlate negatively with achievement motivation among American subjects, and therefore determined its hypothesized relationship to other time metaphors. Grouping this item with fast, direct metaphors (relaxing assumptions about directness) produces a distinct preference for rapid movement as the important variable among the Tanzanian subjects. This rearrangement also conforms with the evidence cited in Chapter III on African preferences for circularity and elliptical design.

The Tartan Test for Color Preference may also suffer from administrative problems as well as from a more important question. The test assumes that subjects will see tartans arranged along a wall as a potential environment. But if the tartans were interpreted as potential clothing, or as part of the self, the results would be exactly opposite from those hypothesized by Knapp. Persons high in achievement motivation would prefer brightly colored, active tartans as representative of their own dynamic personality.

The negative results (described in Chapter IV) imply, according to Hypothesis A, that more research on motivations in Tanzania is needed. This research might be based on further refinement of the existing techniques. However, different sample choice and altogether new testing methods might even be necessary before accepting proof that achievement motivation tests can be profitably employed. Some alternative techniques have already been discussed in Chapter III.

If sensitive measurement of achievement motivation levels is accomplished, the next step is to bring the measurement techniques into line with the nation-building ethic as it now exists in Tanzania. At the moment, the two ethics are far apart. McClelland's TAT in its present form (composed of individually-oriented gain, recognition, and competition) bears little relationship to selfless cooperation. The tests certainly can be altered to examine involvement in less individually-centered achievement. One step was taken already, with the inclusion of a scoring category for nation-building thema in the TAT. New changes should affect the scoring of the TAT in a more profound sense. According to the scoring alteration performed during this survey, the subject still had to differentiate his response from Unrelated or Task Imagery by showing either (1) stated or inferred competition with a standard of excellence, (2) mention of unique accomplishment, or (3) long term involvement with some achievement goal. Only after scoring achievement imagery in these terms could the subject add one point with a nation-building theme in which personal involvement was absent. McClelland and his associates foresaw this problem.

> We were able to include long-term involvement as evidence of achievement motivation only because we have knowledge that in contemporary American society, success in the career usually demands successful competition with a standard of excellence. Not everyone can be a doctor, lawyer. . . .
>
> In scoring the stories of other cultures without knowledge of the culture, it would be necessary to adhere to the criterion of an explicit statement of concern over successful competition with a standard in order to define

the achievement goals of that culture. Only with growing knowledge of the culture could other criteria be added which involve the inference that competition with a certain standard of excellence is inherent in certain cultural activities.[2]

This discussion of inherent weaknesses in the cross-cultural application of current achievement motivation tests should not obscure the efforts that were made to adapt the tests to Tanzanian conditions without destroying their cross-cultural value. The arguments for declaring the negative test results invalid are strong ones. However, as the next chapter will demonstrate, there are even better reasons for accepting Hypothesis B.

I had attempted to deal with the administrative problems of method-culture congruity discussed in this chapter before exposing Tanzanians to the tests. Therefore, I prefer to accept the results as they are, while not completely overlooking the possibility that some of these administrative questions undoubtedly remain. Hypothesis B takes more completely into account the features that have dominated this research from the outset: Is significant achievement motivation to be found among Tanzania's most famous economic achievers? If it is not, can other data explain the obvious achievement differences between Chagga and many other Tanzanian tribes? Do the explanations for Chagga success (whatever they are found to be) contribute insight into present and future national development?

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[2]Atkinson, et al., Motives . . . , p. 184.

VI

CONCLUSIONS

The possibility that the test results are invalid because of technical inadequacies was discussed in Chapter V. A second hypothesis offers greater insight into the negative Chagga test results.

> Hypothesis B: The test results are valid, and achievement motivation differences between the three tribal groups of students and the two groups of Chagga farmers are negligible. Therefore, actual achievement differences must be explained by other factors.

There are three possible variations to this hypothesis. I consider the third to be most correct.

> Possibility B_1: Chagga students are generally not representative of either present or past farmers.
>
> Possibility B_2: Today's Chagga (student or farmer) has undergone motivational changes which differentiates him from more highly achievement-oriented farmers who first planted coffee many years ago.
>
> Possibility B_3: High achievement motivation has not been responsible for Chagga economic success even among the earliest, most innovative farmers.

The first possible variation to Hypothesis B assumes that strong achievement motivation may have set the Chagga apart from other tribes during the early years of coffee

growing. Finding no exceptional achievement motives among contemporary students does not assure a similar level of that motive among their grandfathers. High levels of that motive might have meant that socialization features which helped to create them derived in part from a preceding generation also high in achievement motivation. If that were true, how could the students who are children of achievement-oriented farmers show no exceptional achievement motivation?

Modern education, exposure to nation-building propaganda, and mixing with students from other tribes in the schools may account for the undifferentiated test responses.[1] The Chagga students come two generations after their tribe's period of greatest economic innovation, and have not shared the environment in which their grandfathers took up coffee culture. Today's Chagga children have been freed from the long economic training which preceding generations underwent. Competitive modern educational techniques are replacing and undercutting the remaining compliance component left over from traditional socialization.

Similarly, the content of modern education is introducing avenues to achievement that compete with traditional agriculture (even if cash crops are added). Current measurements of achievement motivation, as already pointed out in

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[1]Most of the Chagga subjects were enrolled in Chagga-dominated secondary schools. Similarly, the Bondei subjects formed one of the two largest tribal elements in Minaki School, and Asians at least half the student body of Mawenzi School. However, all three groups were exposed to large numbers of students from other tribes in their schools.

Chapter II, C, may not be applicable to economics (and especially farming). High scholastic achievers are, in fact, just as likely to choose careers of public service as they are a private economic role. The sciences also draw off many of the more dedicated and disciplined achievers from the scholastic environment.[2]

Traditional education has become less important as the children spend less time at home. The modern secondary schools are also loosing their separate character as the Government Ministry of Education, which has legally taken control of all schools in the country, extends its authority to practical questions of syllabi and teaching methods. The students of all groups chose TAT subject matter which was heavily dominated by the nation-building themes repeated on public communications media; "Play your part," "Fight poverty, ignorance and disease."

Second Possibility. Students from different tribes may have failed to respond in the expected manner because the personalities and attitudes of their tribes are more similar than their respective stages of economic development indicate. Successful coffee growing today requires following certain established techniques. Chagga coffee growers do not seem to work harder or longer than farmers throughout Tan-

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[2]In a study of Scientific Personality, Knapp remarked that "Many . . . had qualities which it seemed to me might well have led them to considerable success in entrepreneutial enterprises generally." In Taylor and Barron, Scientific Creativity: Its Recognition and Development (New York, 1963), p. 210.

zania. Perhaps, as many Chagga will admit, their work is easier.[3] Farms on Kilimanjaro require fewer acres for much more product than lower, drier areas. Coffee entered a Chagga traditional economy shaped by features which are rare in Tanzania: abundant water and fertile soils.[4] But the Chagga were not able to exploit these resources without an elaborate system of irrigation which eliminated the seasonal risk elements that generally dominate Tanganyikan agriculture.

Kilimanjaro's slopes offered four climates with related ecology useful to the Chagga traditional agricultural system. Three were directly employed. Below the arctic environment of the peaks were alpine meadows which were used for herding as well as travel (it was quicker and safer to go up and cut across the meadows than to cross neighboring mitaa). In the tropical rain forests lies the "banana belt," ranging

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[3] A former Chagga chief, Petro Itosi Marealle, has told the author of an informal time-study which he carried out in Vunjo. Chief Marealle became convinced through his work (time accounting sheets that he asked farmers to fill out over an extended period) that Chagga coffee growers could spend their time far more profitably, but were not inclined to do so.

[4] Bananas and maize were the basic dietary element, along with millet, potatoes, beans, cassava and other plants. Cattle and goats were also important to Chagga diet and social structure. The best sources of information on Kilimanjaro's climate and hydrology are J. C. Ramsay, "Kilimanjaro--Sources of Water Supplies," Tanganyika Notes and Records, Kilimanjaro, no. 64 (March, 1965), pp. 92-94; A. G. Kiki, "Kilimanjaro and the Furrow System," Tanganyika Notes and Records, no. 64, pp. 95-96; D. N. Sampson, "The Geology, Volcanology and Glaciology of Kilimanjaro," Tanganyika Notes and Records, no. 64, pp. 118-124; and M. von Clemm, "Agricultural Productivity and Sentiment on Kilimanjaro," Economic Botany, vol. 18 (April-June, 1964), pp. 99-121.

from 3500 to 6000 feet above sea level. This belt is the center of Chagga life and the site of each family's "Kihamba."[5] There is evidence that the zone of settlement extended higher into the forest during earlier times,[6] and several factors may account for the gradual movement down the mountain: (1) the traditional enemy, the Masai, has been neutralized; (2) coffee culture is more profitable at lower altitudes; and (3) forest conservation measures have recently outlawed settlement in the higher regions of the rain forest. In any case, population increase, limited access to the upper forest belt, and reluctance to move have led to intense overcrowding in this "Vihamba" region. One study places the population density at the astronomical level of 3690 per square mile in one Kibosho mtaa.[7] Each family lives on its small plot, farming the ground around the huts as well as other dispersed holdings, and providing fodder for the family's cattle, most of which are stall-fed.

The fourth ecological zone, tropical arid, is related to Chagga economic life particularly because of these cattle,

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[5] "Kihamba [sin.], vihambas [plur.]" is Kichagga for residence with immediately surrounding fields. "Shamba" is Kiswahili for farm, which Chagga use to denote dispersed holdings, particularly maize and other crops in the arid zone below Chaggaland proper. Their homes are situated in the former.

[6] Stahl, History . . . , p. 30, and von Clemm, op. cit., p. 103.

[7] von Clemm, ibid., p. 101. Lord Hailey, African Survey, Revised, 1956 (Oxford, 1956), p. 279, placed the average density at 600 per square inch a decade ago. von Clemm asserts that the present average is considerably higher. "mtaa" is Kichagga for parish (plur. "mitaa").

which need more fodder than is available in the "kihamba belt." Few Chagga choose to settle in the arid regions, and even those who now work in Moshi generally prefer to commute on sometimes treacherous roads rather than leave their vihamba for any length of time.[8]

Not only was Kilimanjaro's ecology well suited for coffee production. The Chagga also received considerable aid from outside sources. Coffee was brought to Kilimanjaro in the 1890's by German missionaries.[9] For some time the crop was raised principally on the mission's grounds for their own revenue, and then by European farmers who were encouraged by the German Government to come to Kilimanjaro in the early 1900's. The missionaries then began to introduce the crop among Africans around 1908.[10] Sir Charles Dundas, the first British D. C., saw its potential to provide money income, and encouraged Africans to plant the crop extensively. He often found himself mediating between African and European planters who feared plant disease from the former's crops. When Dundas' term of office began, in 1916, Africans owned approx-

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[8] Chagga women trudge down the mountain daily, cut bundles of grasses, and return in the afternoon carrying these considerable burdens. The grass-cutting operation in the low slopes and plains at the foot of the mountain is carried out alongside extensive cattle and goat herding, and seasonal maize and grain cultivation.

[9] Kilema Mission, 20 miles east of Moshi, was the site of the first planting in 1898. One Father Krieger reportedly obtained the seed from Réunion. C. Mirepoix, "The Chagga of Kilimanjaro," Canadian Geographical Journal, vol. 60-61 (1960), p. 205.

[10] Mirepoix, ibid., p. 205.

imately 14,000 trees.[11]

A cooperative movement was started in the 1920's to provide planters themselves with a direct role in processing and marketing (up to that time dominated by Indian middlemen). British officials were hired to administer the affairs of the Co-operative, but Chagga themselves retained full control.[12] A. L. B. Bennett was appointed as manager, a man who identified himself with problems of coffee growing and marketing and committed his life to their solution.

Coffee cultivation has expanded steadily. The local "primary" societies (there were 53 in 1962) are important centers of information and contact for the 50,000 coffee planters. However, the crop, which has amounted to over 5000 tons for the past few years, is a cause of annual anxiety because of fluctuating prices, about which the Co-operative can do little.[13]

Much of the remainder of Tanzania offers a stark, for-

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[11] Ibid.

[12] History of the Chagga co-operative movement can be obtained in T. L. M. Marealle, "The Wachagga of Kilimanjaro," Tanganyika Notes and Records, vol. 32 (1952), pp. 57-64; Mirepoix, ibid.; E. S. Munger, "African Coffee on Kilimanjaro; A Chagga Kihamba," Economic Geography, vol. 28 (1952), pp. 181-185; and Kilimanjaro Native Co-operative Union, Ltd., Annual Report, 1961-1962 (Moshi, Tanganyika, 1962), Appendix A.

[13] The relationship of prices to Chagga coffee production is a key element in understanding the nature of the tribes' involvement in the market economy. For a recent analysis of world coffee market problems, see "Coffee Growers Ponder What to Do When Every Cup Is Full," New York Times, April 9, 1967.

bidding contrast to Kilimanjaro's obvious productivity. To be sure, there are other sectors where well-watered, rich soils occur. In some of these, African coffee and cotton growers have rivalled the Chagga in adaptiveness to market incentives. In the other potentially rich areas, poor communications (Mbeya, Iringa, Njombe) or tactless colonial policy and resultant political turmoil (Uluguru) have limited such development. While the Bondei, for example, would not qualify as the poorest tribe in Tanzania, they have been plagued by an ecological setting far less hospitable than Kilimanjaro's, and therefore more typical of the nation generally.[14]

The ecological advantages of Kilimanjaro support the view that present Chagga farmers do not need exceptionally

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[14] From the time of their arrival in the lower Pangani Valley, maize, millet and rice have provided the basis of Bondei subsistance. Other crops included beans, banana, cassava, sweet potatoes, and sorghum. (G. Dale, "Principal Customs and Habits of the Natives Inhabiting Bondei Country," Journal of the Anthropological Institute, vol. 25 [1895], pp. 208-210.)

Rainfall in the Lower Pangani Valley, although ample (30-50 inches per year) is seasonable and treacherously unreliable. Soils are not as fertile as on volcanic Kilimanjaro, and the waters of the Pangani are of doubtful use because of their high salinity, which still sets experts to wondering whether continual irrigation would cause more harm than good. (International Bank, The Economic Development of Tanganyika, pp. 89, 187, and Tanganyika Government, Atlas of Tanganyika [Dar es Salaam, 1956].)

Natural pests have always provided grounds for colorful Chagga anecdotes, but the actual losses to rain forest elephants (among the higher vihamba) and to plains elephant (in the maize shambas) are not proven. (von Clemm, op. cit., pp. 120-121.) Pests in Bondeiland have provided less spectacle but, probably, much more damage. Wild pigs have always plagued Bondei crops and the tsetse fly, unknown on the slopes of Kilimanjaro, is endemic in Lower Pangani. (Dale, ibid., pp. 208-210, and International Bank, ibid., Map 4 on p. 20.)

high achievement motivation to continue earning large sums from coffee export. This hypothesis is supported by the failure of sentence completion responses to show any difference between "good" and "bad" Chagga farmers. It is a plausible corollary to the previous contention--that achievement motivation may have weakened in present students, making them unrepresentative of past or present Chagga farmers. This second argument begs a further question which, in my opinion, leads to the correct view of the overall Chagga accomplishment.

Third Possibility. Because of historical and ecological factors which explain much of the past innovativeness of the Chagga, it would be safe to conclude that their achievement motivation levels may never have been significantly higher than other Tanzanian peoples. Just as ecological factors help to explain the current gradual spreading of coffee culture, historical events peculiar to Kilimanjaro account for Chagga adaptiveness.

The Chagga originated from decentralized tribal systems. Historians have cited Kamba, Masai, and Teita as the most important source tribes for Chagga clans.[15] In spite of the Nilotic element, the Chagga are invariably classified along with the northeastern migration of Bantu into East Africa.[16] Some confusion remains over how long ago the Chagga

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[15] C. Dundas, Kilimanjaro and its People (London, 1924), p. 283, and Stahl, History . . . , Ch. 6.

[16] C. G. Seligman, Races of Africa (London, 1957), Ch. 9, identifies three subgroups of Eastern Bantu; Interlacus-

came to Kilimanjaro,[17] but there is agreement on the important points of Chagga protohistory. In the first place, the mountain has served as a crossroads for trade. For centuries caravans have provisioned at Kilimanjaro for the trip inland, probably as long ago as there were important settlements on the coast itself--at least 1500 years. Phoenicians and Assyrians may have had little impact on the interior, but Jews, Arabs, Hindus, and Chinese, interested in trade for slaves and ivory, certainly did leave their mark, and both coast and interior were affected by the arrival of Islam by 1000 A.D.[18]

North-South Safari routes may have been just as important to Kilimanjaro as the coastal trade was. Parts of ancient roadways have been discovered showing a "system of communication running from north to south on the east side of

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trine, true Eastern, and North Eastern (Kamba, Kikuyu, Teita, Chagga, Nyika, Pokomo). G. P. Murdock, Africa, Its Peoples and their Culture History (New York, 1959), Ch. 44, adds Pare and Shambala to the "north Eastern" group, and calls it Kenya Highland Bantu. Dundas, who knew the Chagga better than either anthropologist, noted "a considerable Masai strain." (Ibid., p. 46.)

[17]Dundas asserts their earliest settlement as C. 1400 on the East side of Kilimanjaro, but no one else is prepared to set a date. Nathanial Mtui, who collected notes for Dundas, was of the opinion that some Chagga clans were as old as "time immemorial." (Stahl, History . . . , p. 50.)

[18]Kilwa reached the climax of its contact with the interior by the late thirteenth century and more recently the Coastal cities of Bagamoyo, Tanga, Mombasa, and Malindi certainly used Kilimanjaro as a way station on their routes to Engaruka, Sonjo, and other now ruined "Azanian" cities. Z. Marsh and G. W. Kingsworth, An Introduction to the History of East Africa (Cambridge, England, 1957), p. 6, B. Davidson, Black Mother (Boston, 1961), Part V, and B. Davidson, Lost Cities of Africa (Boston, 1959), pp. 224-239.

the Great Lakes."[19] Irrigation and other skills may have died out in some areas overrun by Nilotic migrations, but Kilimanjaro shows signs of continuous occupation and remnants of Azanian techniques.

The people who have inhabited Kilimanjaro have a long settled history lacking in most of Tanganyika. Their settlements have been in periodic contact with outsiders long enough to be able to sift information discriminantly, taking for their own use what seemed, after generations of experience with their own environment, to enhance their own techniques. Thus, the Chagga are more racially and culturally mixed than other Tanganyikan peoples. Their most recent historian argues the point in these words. "Part of the strength of the Chagga lies in their cross-breed heritage. Different immigrants brought different skills: honey-hunting and elephant-trapping, cattlekeeping, cultivating, house-making, pot-making and the blacksmith's crafts."[20] Most other Tanganyikan tribes owe their present position to waves of migration, during which they remained more culturally distinct than the Chagga who are a conglomerate people. The latter have sifted to the mountain from all directions, bringing the skills and outlooks of at least eight tribes and four races.[21]

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[19] P. M. Worsley and J. P. Rumberger, "Remains of an Earlier People in Uhehe," Tanganyika Notes and Records (1949), p. 27.

[20] Stahl, History . . . , p. 44.

[21] K. M. Stahl, "Outline of Chagga History," Tanganyika Notes and Records, no. 64 (March, 1965), p. 37, cites the

The conglomerate origins of the Chagga may have reinforced social traits belonging to the Bantu generally. Social stratification was weak, and Kamba, Taita, and Chagga all show traditional egalitarianism. Recent historians have attacked the old view of Bantu governmental systems as despotic, and of their social system as hierarchical.[22] The outside force of Islam, brought to Kilimanjaro by Swahili traders in the early nineteenth century, stimulated strong chieftainship by adding to the chief's knowledge, wealth, and prestige.[23] Political centralization and stratification is therefore a recent phenomenon among the Chagga. Wherever these features existed among the northern Bantu thrust (as in Usambara, or the Interlacustrine tribes), it was due to conquest by outsiders. In comparison with other areas of Africa,

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directions of present contact between the Chagga and their neighbors, on all sides of the mountain, to show how the Chagga probably originated via piece-meal additions. Also, she refers to obviously bushmenoid and nilo-hamitic racial types one sees among the Chagga today. A. H. J. Prins offers another example, the origin of the Digo clans of Chagga, who split off from the main Digo tribe and settled on Kilimanjaro. (The Coastal Tribes of the North-Eastern Bantu [London, 1952], p. 45.

Their tribal name refers not to a people, but to a place, and it means (in reference to tribal fragments which had broken away or been chased to Kilimanjaro) "to stray" or "get lost," or more simply, "over there." See J. L. Krapf, Travels, Researchs and Missionary Labours during an 18 Years' Residence in Eastern Africa (London, 1860), p. 243 f.

[22] Davidson, Black Mother, pp. 135-139, referring to the limited powers of the Mani-Kongo, M. Gluckman, Custom and Conflict in Africa (Glencoe, Ill., 1959), for limitations of the Swazi kings' powers, and Davidson, Lost Cities . . . , p. 294.

[23] "Islam made for solidarity among its followers which would be mobilized for political purposes." (Stahl, History . . . , p. 359.)

the earlier descriptions of "North-eastern" Bantu social structure as "strikingly egalitarian" still prevail.[24]

It is important to stress this feature of traditional Chagga life. The absence of rigid political or social hierarchy allows economic advance to be viewed as a process compatible with existing structures, rather than as an outlet for frustrated individuals whose access to status is socially and politically blocked. The latter situation, as Hagen has shown, requires more deep-seated entrepreneurship in those who do attempt the economic road to success.[25] They must be deeply motivated to overcome the obstacles placed before them.

In the past two centuries, Chagga history has passed through several stages, beginning with individual clans. Chieftainships, based on the defense potentialities of Kilimanjaro's contours, did not destroy the overlapping clanships. Clans' representatives were dispersed among the different chiefdoms on Kilimanjaro, providing a common sense of tribe. Nevertheless, political authority was bounded by the ravines which serrated the mountain. As natural boundaries, the rivers divided each chiefdom (Kichagga "mitaa" plural, "mtaa" singular) from its neighbors. This provided each mtaa with excellent lines of defense which were perfected with extensive earthworks long before there was any political cohe-

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[24]Murdock, Africa . . . , p. 345.

[25]Hagen, On the Theory of Social Change, Ch. 3.

sion or "Paramount Chief."

Considerable doubt has recently been cast on the old view, held by the first European traveller to Kilimanjaro and by Wittfogel,[26] that powerful Chagga chiefdoms existed before the first Europeans arrived in the 1840's.[27] The theory that Marangu was a natural choice for the eventual Paramount Chief's recruitment, because it had always been the strongest mtaa, is now unlikely.[28] A more correct view is that the Chagga tended toward decentralized political structure for the tribe as a whole, but with strong local mitaa administering the agriculturally-based economy. European intervention brought about large-scale political centralization, which had not existed before. According to Stahl's "rough estimate,"

> The Chagga were divided into not less than 100 individual political units each under its own petty ruler at

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[26] K. Wittfogel, Oriental Despotism (New Haven, 1957), pp. 90, 235 f., and 240 f. And J. L. Krapf, Travels, Researches and Missionary Labours during an 18 years Residence in Eastern Africa (London, 1860). Also, see the writings of Dundas, who divides Chagga History into 4 Periods, "Clan, Birth and Growth of Chiefships, Period of Paramount Chiefs, and Europeans," implying considerable political centralization before European intervention. (Kilimanjaro and its People, p. 40.)

[27] Stahl, History . . . , Introduction and Chs. 8 and 9.

[28] While she succeeds in shaking the old beliefs of Chagga centralization under Marangu, Mrs. Stahl fails to prove decisively that Kibosho should replace Marangu in history as the dominating power. Mrs. Stahl's argument rests on the importance in Chagga memories and folklore of Mangi Sina of Kibosho, a gallant and terrible king who was conjecturally poisoned by the Mangi (king) of Marangu. But it is stretching the point to say that a figure revered today by many people of different subtribes must have been a centralized monarch. The origins of African charismatic figures today, often coming from the less important tribes, indicates exactly the opposite.

the beginning of the 19th century (and into) certainly well over 50, until the last decade of that century.[29]

Political life on the mountain was more competitive, and, at times, chaotic, than the early explorers and travellers could have known from their limited contacts and information. Visitors were tricked into thinking that central power existed where it actually did not. "The real nature of Chagga politics was highly individualistic . . . backed by a wealth of detail and subtle political argument."[30]

Within their boundaries, the many local chiefs ruled absolutely. The habitat of Kilimanjaro gave each Chagga mtaa reasons to submit to strong leadership, but limited its ability to expand at the expense of the others. The gorges of the Sanya, Kikafu, Weruweru, Una, and smaller streams provided enough water for many tribes, but its successful utilization led to an elaborate irrigation system which necessitated highly refined legal and political authority.

At the same time, travel across the ridges was tortuous. Those who were inclined to isolate themselves from neighboring tribes and even from other Chagga were able to do so.[31]

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[29]Stahl, History . . . , p. 13.

[30]Ibid.

[31]During my research I noticed that I did well to have an assistant from the particular area that was being visited. The KNCU inspectors seemed to have better rapport in their own mitaa, and sometimes showed enough suspicion about people in another mtaa as obviously to jeopardize my chances for success there.

Within each mtaa, political authority was absolute, and functionally diffuse. Chiefly prerogative was supreme, even over the lives of subjects. Numerous anecdotes attest to this.[32] The importance of authority vested in the chief was particularly related to maintenance of the economic structure.

Although each family earmarked much of its production to maintain the Chief, traditional Chagga society remained, in one sense, highly individualistic. Villages did not exist, only scattered plots belonging to individual families who were basically self-sufficient. There were, to be sure, a highly ritualized agricultural mythology and practices accompanying actual production, but they were intended to enhance the life of the Chagga generally, rather than to enrich any deified ruler. In conclusion, there is little evidence to class the Chagga political structure as "oriental despotic," together with Imperial China and Mogul India.[33] Chagga hereditary kingship was localized and limited rather than overburdened with imposing and self-perpetuating corvee labor and other "pharonic" features. The "mangi" (king) was neither supernatural nor overly despotic.[34]

In summary, it may be said, first, that the Chagga are a collection of different tribes who have had unique stimula-

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[32] Stahl, History . . . , pp. 188-189.

[33] Wittfogel, op. cit., Ch. 7, E.

[34] Stahl, History . . . , p. 196, cites the example of Kibosho Chagga refusing to recognize a chief.

tion resulting from continual cultural infusions. Second, Kilimanjaro provided its inhabitants with a defensible base which alleviated the continual migration-adjustment-migration syndrome common in East African history. Third, internal Chagga history was typified by intense competitiveness rather than centralized, hierarchical organization.[35] Therefore, because of these prehistoric factors relating to Chaggaland, the tribe occupied a fortunate position from which mastery over environment by recent generations can be more easily understood in the face of psychological similarities between contemporary Chagga and members of other tribes.

Proto-historical developments have been as important in limiting the achievements of many other Tanganyikan tribes as they have been fortuitous for the Chagga. Near Kilimanjaro, for example, are some Northeast Coastal Bantu of the more "hamitized" Nika Cluster who have adopted irrigation and other methods, including elements of pastoralism from the Nilotics, while others (Pokomo, Zigua, Bondei) have practically no cattle, and employ only the ancient Bantu agricultural techniques.[36]

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[35] Dundas' point, that the Chagga were "on the verge of (central) kingship" when the Europeans arrived, is, therefore, debatable. (Kilimanjaro . . . , p. 97.)

[36] A. H. J. Prins, The Coastal Tribes of the North-Eastern Bantu (London, 1952), p. 15, Murdock, Africa . . . , p. 308 and Ch. 39, and International Bank, The Economic Development of Tanganyika, p. 16.
The Bondei were screened from the nearest concentrations of Cattle in a manner that is instructive in itself. Among the tribes to their north (Pokomo), cattle culture was

The traditions of Northeast Coastal Bantu tribes identify their original home as "Shungwaya," a city (or area) near the Tana River in Eastern Kenya. From that area, Sambaa, Bondei, Digo, and Zigua formed probably as collections of followers of disgruntled contenders for chiefship. Galla pressure from the north may have added to the Shungwaya breakup and ensuing southward migrations.[37]

In the process of these movements, and of earlier ones from the far south that originally brought the Bantu to East Africa, Azanian Civilization was either destroyed or absorbed.[38] Compared with the impact of the Azanian techniques on Kikuyu, Taita, Chagga, and Shambala (Murdock's Kenya Highland Bantu), who settled in environments more compatible with those techniques, none of the Northeast Coastal Bantu seem to have greatly benefitted. The Chagga learned to combine hydroagriculture, animal husbandry, and their own ancient skills into a diversified economic system suitable to their

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restricted by the raiding of the Galla. To their west (Zigua), the Masai have limited any potential Bantu cattle herding.

[37] Prins, ibid., pp. 8-12, 43-51, 102-104, and Abdallah bin Hemedi, The Kilindi (Boston, 1963).

[38] Whether or not a Bondei tribal identity was established before the Shungwaya period, the tribe does not show the results of contact with Azanian hydro-agricultural techniques. It is possible that a cushion of Northeast Bantu moving ahead of the Bondei (Pokomo, Giryama, Shebelle, Digo) did assimilate some Azanian culture, shielding the Bondei from them, just as they would later inhibit Bondei contact with pastoralism. See G. W. B. Huntingford, "Azania," Anthropos, vol. 35 (1940-1941), p. 209 f.

environment. Few other Bantu benefitted either from the new techniques or from ecological surroundings appropriate to assimilate them.

Could coastal civilization have overcome the cultural isolation that hindered development among these less fortunate Northeast Bantu? The most frequented route from Tanga to Usambara, Kilimanjaro, and the Great Lakes skirted many tribal areas in preference for a few "safe" routes.[39] Furthermore, as Prins has indicated, the Coastal tribes were not notably friendly with each other.[40]

The Colonial Period. The events of the Colonial period substantiate the argument that the Chagga have been historically fortunate. A Lutheran Mission was established on Kilimanjaro in 1885, but until 1890 the Germans were busy with rebellions and pacification on the Coast. In 1890 Major Wissmann established German control over Kilimanjaro, defeat-

[39]The Zanzibari Sultan's Governor in Pangani, anxious to keep the Reverend Charles New away from Shambala which was in revolt against Zanzibari authority, directed New through Bondeiland in order to eliminate the possibility of contact between the Reverend and the Shambala chief. Not only were the Bondei removed from main travel routes (Bagamoyo routes were far to the south) but they were also shielded from actual contact with the coast by Swahilized Digo and Zigua. (Charles New, "Journey from the Pangani, via Usambara, to Mombasa," Proceedings of the Royal Geographical Society, vol. 45 [1875], pp. 317f.)

[40]Prins, op. cit., p. 40. Recently, the "utani" relationship has linked coastal tribes, protecting members of each as they passed through the other's territory, allowing them to pass peacefully, and be buried with the honors of a local tribesman if they died in transit. But even "utani" has been called "absense of hostility" rather than positive friendship. (J. A. K. Leslie, A Survey of Dar es Salaam [London, 1963], Ch. II, especially pp. 34-35.)

ing the Chagga in an engagement that impressed the German commander with the defenders' skill and bravery.

Colonial rule did not notably change Chagga political life. A new dimension was merely added to the old intrigues between mitaa. German (and then British) officials, only partly aware of the complexity of Chagga politics, were drawn into the struggle by various sides.[41] Therefore no great changes occurred in the scope of Chagga politics which might have disrupted the advances in Chagga economy, for which the existing political and administrative system was already well suited.

The economic contribution of the colonial period in Kilimanjaro was great, although the same statement can by no means be made to apply to the rest of the Territory. Stahl has noted the fortuitous nature of colonial developments for the Chagga.

> Had Britain and Germany in 1886 drawn the boundary between British and German East Africa round the southern instead of the northern side of Kilimanjaro, the Chagga would have fallen within the British zone. . . . It was worth it for them to be in German East Africa if only for the single reason that they were legally allowed to plant coffee, the foundation of their modern prosperity, thirty years earlier than the Kikuyu. The transfer of sovereignty in 1916 . . . was equally fortunate, for gentler rule saved the spirit of the Chagga from being broken.[42]

Other tribes fared less well during the Colonial period. While the Germans employed the Chagga Chiefdoms where

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[41] Stahl suggests that Marangu Mtaa was the most successful at this game. (History . . . , Ch. 14.)

[42] Ibid., p. 362.

possible (and the British also ruled the Chagga indirectly), most of German East Africa was administered through German-appointed akidas and jumbes. With traditional rulers thus weakened, the British had frequently little choice other than to continue the same process.[43] While the Chagga endeavored with some success to turn German and British authority to their own advantage in internal quarrels and as protection from the Masai, the Coastal regions provided a main stage for the destructive Swahili uprising led by Bushiri.[44] And while the Kilimanjaro missions were planting coffee and British administrators were limiting the alienation of Chagga land after 1916, other areas succumbed to large-scale land distribution to European sisal planters.[45]

To conclude, the missionaries who introduced coffee and the administrators who protected native coffee growers were essential agents. Second, a greater reservoir of skills blessed the Chagga because of their diverse origins and central (but defensible) location. A super-structure of technical capital had been accumulated (viz. the network of irrigational canals with attendant legal codes) which applied itself perfectly to coffee culture. The trees, which need

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[43] V. Harlow and E. M. Chilver, eds., History of East Africa, vol. II (Oxford, 1965), Ch. III.

[44] J. Listowel, The Making of Tanganyika (London, 1965), pp. 17-19.

[45] IBRD, Table 15. Much of Tanganyika's Sisal (which accounted for 25% of the 2.1 million acres of alienated land in 1959) comes from the Pangani area which has undoubtedly limited Bondei expansion. Ibid.

shade under the tropical sun, found an effective environment in existing banana groves.

Wide-scale innovation among the Chagga did not require values different from those of traditional life, which can be characterized from the Values Test results as "adaptable hedonism," rather than concern with achievement and standards of excellence. To grow coffee, all the Chagga needed was sufficient adaptability to grasp the benefits of a new technique. The origins of this adaptability can be found within traditional Chagga social structure and education.

The Sources of Chagga adaptability. The traditional Chagga family was patrilocal, patrilineal, and, at least in theory, patrisupreme. However, patrisupremacy was in fact weak.[46] The mother's death brought greater fanfare than the father's, and young children were said not to have any distinct preference for mother or father, though even boys saw little of their fathers until age seven or eight.[47] At about that age, sons began their serious economic training.

The first instances of occupational socialization began before the second birthday for girls, and slightly later for boys.[48] However, during the first six or seven years,

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[46] O. Raum, Chaga Childhood (London, 1940), p. 77.

[47] Ibid., p. 131.

[48] At age 1.8, girls were already encouraged to balance bundles of sticks and grass on their heads. Boys at 2.3 might be encouraged to plant a small bean patch, and to care for it with some degree of responsibility. (Ibid., p. 146.) According to Dundas, girls were expected to perform chores and learn useful techniques "as soon as they could walk," but boys were left to be more indolent during their younger years. (Kilimanjaro . . . , p. 201.)

occupational training was not partitioned by sex.[49] In everyday teaching, a mother tended to neglect her sons. They were allowed to run free considerably more than girls, who were generally thought to be better workers.

Boys' training started in earnest when they began to be noticed by their fathers and by their peers, at age seven or eight. At that time they were consciously separated from their mothers and sisters for long day-time sessions in the banana groves and among the cattle. They were instructed which bananas were used for fodder, for eating, and for beer brewing, and they learned the names and uses of many varieties of plants.[50]

Husbandry was also learned at age seven, when the economic aspects of socialization abruptly reached new dimensions as boys discovered the laws and penalties attached to trespassing and grazing on others' lands. Animal husbandry brought "home to the boy that his freedom of action is limited by the rights of others," but also gave him ample free time to enjoy the company of playmates.[51]

Agricultural training provided the primary link between social system and economic occupation for Chagga youths. Animal husbandry training consumed the better part

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[49] According to Raum, "This disregard for the traditional division of labour is strongly marked when the eldest child is a son who has to do duty as a nurse, or a girl is the only child and has therefore to pasture the cattle." (Ibid., p. 78.)

[50] Ibid., p. 198.

[51] Ibid., p. 202.

of six years of a boy's youth (from seven to initiation age), and left an important impact which will be discussed shortly. However, the Chagga viewed farming as a "uniting" occupation while herding divided and alienated people from each other.[52] A densely packed society living under the attitudinal complex of a herding, nomadic way of life would have been the most unfortunate of combinations. The Chagga could afford no Ghengiz Kahn. Yet a vigorous people, schooled for generations in the art of playing mtaa versus mtaa, plains tribes against each other, and then both against European rulers, needed an outlet for the "wilder" instincts. The free life of ten-year-old Chagga herdsmen, with time enough for a host of competitive and physically exertive games, freed years of each youth's life for the exercise of these pastimes.

From ten to twelve, boys began to learn about irrigation and hydrology.[53] Many of the skills they already knew from watching their fathers repair existing water works. The laws of water rights and access had to be taught. In short, they began to move from the heights of self-indulgence and carefree life toward their useful place in an intricately organized agricultural society. Boys ceased to sleep in their

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[52] Ibid., p. 204. "Tilling a field is their symbol of honesty and simplicity of life; the rearing of cattle makes a man insidious and greedy. It might be thought that the conflict between these views expressed the age-long struggle between aristocratic nomad and subjugated settler. But it rather represents the contrast between the favorite occupations of the two generations."

[53] Ibid., pp. 206-211.

mothers' huts, moving instead into their fathers'.[54] This process climaxed with the now defunct initiation ceremonies and attendant classes during which age groups went up into the forest and meadows to culminate the process of approaching manhood and responsibility.[55]

Occupational training takes place today, at least during school vacations, but during the past two generations the nature of training at home has changed in one crucial sense. According to Raum, the primary aim of traditional Chagga education was not technical and procedural knowledge, but rather incentive and ambition. These functions have disappeared from the "modern trend for pedagogical specialization," which "tends to kill a general educational capacity."[56]

Without cattle to watch, boys in Northeast Bantu tribes spent a greater part of their youth assisting their fathers in the preparation of land for cultivation, and in the occasional hunt.[57] Like Chagga youths, they experienced

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[54]Marealle, op. cit., p. 60.

[55]Dundas, Kilimanjaro . . . , p. 204, describes three different traditional ceremonies which all had the same connotation. "Kisusa" was a meat-eating ceremony replete with humiliation designed to quiet unruly children down. "Kirundutze" was similar to "Kisusa," but was especially for boys whose fathers had died, leaving them in unavoidable and immediate responsibility. The "Ngazi" or initiation ceremony, was the greatest suffering and tribulation the young Chagga had yet gone through. (P. 214.)

[56]Raum, Chaga Childhood, p. 211.

[57]Dale, op. cit., pp. 189-192. Ethnographic sources dealing specifically with the Bondei are rare, and not particularly good. According to Gulliver, only Chagga, Masai, Nyakusa, Sambaa, Nyamwezi, Sukuma, Hehe, and Gogo have been

initiation and hazing ceremonies.[58] The crucial point is that Chagga youth were subjected to socialization features of both the agricultural and pastoral ways of life. In view of the emphasis which has always been placed on Chagga agriculture, their socialization showed surprising balance. It is true that Chagga agriculture required more complicated interdependencies for the effective employment of the irrigation system than did the grain-based economies of many Bantu tribes of the area. At the same time, the pastoral features of Chagga childhood necessitated harsher measures to ensure discipline among emerging adults.

Chagga occupational and economic socialization stressed individual effort and accomplishment. So did other important features of growing up. Ethnologists have described the competitive element in Chagga play activities. Gutmann listed game after game in which physical and mental agility and

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subjected to adequate ethnographic study. Other tribes, such as Bondei, have been studied only in accounts of missionaries and travellers. Good ethnography is only beginning to emerge among them. (P. H. Gulliver, "Anthropology," in R. Lystad, The African World [London, 1965], p. 91.

[58]The Chagga initiation ceremony, "Ngasi," long dead, is described by Dundas, Kilimanjaro . . . , p. 214. Accounts of Zigua, Digo, and Bondei initiation do not reveal as elaborate a ceremony. See, for example, Dale, op. cit., pp. 190-192, on the Bondei "Galo" (initiation). This difference might be explained by the relative absense in those tribes of secondary socialization features that hindered organization compliance required from members of an agricultural tribe. On the subject of disciplinary and educational employment of these ceremonies, see M. J. Herskovits, The Human Factor in Changing Africa (New York, 1962), p. 222, B. Malinowski, The Dynamics of Culture Change (New Haven, 1945), p. 53, and Jomo Kenyatta, Facing Mt. Kenya (New York, 1962), pp. 4, 132, plus Ch. 6.

strength led to achievement-determined play-group leadership which was lost as quickly as it was won.[59] Are the Chagga distinct from their neighbors in this regard? During the era before modern schools Chagga children might have spent more time in pure-play activities, as a result of their tribe's relatively abundant food supply. At least this much is certain: ethnographers of the Chagga devoted considerable attention to describing boys at play, and attached great importance to this social feature.[60]

There may also have been some significance in the comparatively easy mobility and large size play-groups that resulted from the Chagga's decentralized settlement pattern; "there are no towns or even villages anywhere in Chaggaland proper."[61] Although no larger at any one time than those of, for example, Bemba or Masai children, Chagga play groups drew from a large source. This necessitated more mobility and continual proof of leadership capacity, widening the boys' outlooks and preventing rigid internal stratification. The more typical Bantu social unit, the hamlet, provided a more constant play group.[62]

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[59] B. Gutmann, "Kinderspiele bei den Wadschagga," Globus (1909), and Raum, Chaga Childhood, p. 266.

[60] The games of other Bantu tribes were not significantly less competitive than those of the Chagga, but Chagga youth may have had more opportunity to indulge in them. On Bondei games, for example, see Dale, op. cit., pp. 185-186.

[61] von Clemm, op. cit., p. 101; Dundas, Kilimanjaro . . . , p. 258.

[62] Murdock, op. cit., p. 310.

These socialization features, which set the Chagga apart in some degree from other Tanganyikan peoples, are important because they existed at all. The educational effect of a mixed training in both agriculture and animal husbandry was imprinted on Chagga child and adult alike. On the one hand, economic cooperation and interdependence were inculcated through instruction in hydroagriculture. But Chagga children never knew the compliant values of this agricultural training to override the mixed nature of their overall socialization experience. Technical competence was less important than desire to do the job well, regardless of its nature.[63] Nor is this evidence refuted by comparisons of Chagga religion with other Bantu tribes. Traditional Chagga beliefs were to some degree "deterministic," but the Chagga God, Ruwa, was not wrathful or vengeful, but instead basically protective and lenient, leaving more scope for feelings of personal competence on the part of individual Chagga.[64]

The fact that Chagga values were more interwoven (no clear preference for individualism or social values, achieve-

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[63] Raum noted, "Only in one case--that of building a hut--is a model used in conjunction with the definite teaching in the principles underlying the job. Perhaps the greatest individual incentive brought into play is ambition. Skill in the basic tasks of a Chaga household is tested . . . but by itself skill means very little. . . ." (Chaga Childhood, p. 211.)

[64] Accounts of Chagga religion can be found in G. N. Shann, "The Educational Development of the Chagga tribe," Overseas Education, vol. 26 (1954), pp. 47-65; F. R. Lehmann, "Some Field Notes on the Chaga of Kilimanjaro," Bantu Studies, vol. 15 (1941), pp. 385-396; Dundas, Kilimanjaro. . . .

ment or pure enjoyment) in three of the five factors obtained from the results of Morris' Ways to Live Test may indicate that the complex and contradictory aspects of Chagga socialization have made a mark on the tribe's personality. The result of their mixed socialization experience was a capacity to adapt.

In their study of the effects of culture on personality, Barry, et al., indirectly denied this essential Chagga adaptability by failing to recognize the tribe's agglomerative nature. Those authors pointed to distinct socialization practices peculiar to different types of economic systems.[65] Traditional cultures tended to perpetuate themselves through these training features, and could be classified by the amount of food accumulation. The Chagga, as high accumulators, were depicted from the ethnographic record of their traditional child training features as a typical high-accumulation agricultural system. In such a system, obedience and compliance training were the norms rather than achievement, assertion, and independence. Since those authors saw daring deeds and unpredictable behavior to be undesirable and dangerous features for the members of that type of economic culture, only one conclusion was possible; viz., that the Chagga would conform to this pattern.

Wittfogel developed similar arguments in his study of

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[65] H. Barry, M. K. Child, and I. L. Bacon. "Relation of Child Training to Subsistance Economy," American Anthropology, vol. 61 (1959), pp. 51-63.

"hydraulic" societies. Chagga traditional tribal organization qualified as the "despotic, hydroagricultural type" because it met several preconditions: (1) a characteristic division of labor into large-scale protective operations; (2) intense cultivation; and (3) organized cooperation on a large scale.[66] The resultant social and political organization left little room for individual initiative based on the expectation of exceptional material reward. "In this setting, private wealth does not necessarily, or even primarily, establish public prominence."[67]

The most important fact to emerge from the review of Chagga history and economy was the difficulty of categorizing Chagga traditional life according to one "type." Standard Deviations of the test results for TAT (Table 1, page 45) show that variation in performance today is greater than among Bondei subjects. This is in line with the historical evidence of diverse origins among the Chagga and their mixture of agricultural with pastoral social systems. Because they came from many tribes with different skills and ways of life (and, probably, life outlooks), the Chagga did not conform to molds as easily as indicated by the authors cited above. While traditional coming of age brought harsh realization (through circumcision, initiation hazing, and content of instruction) of one's disciplined role in the intricate

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[66] Wittfogel, Oriental Despotism, Ch. 2.

[67] Ibid., pp. 234-237.

agricultural machine, these experiences were balanced by earlier training and practice of pastoral values (independence and assertion). It is my thesis that Chagga adaptability derived from this combination of both types of training. It was not a question of pure entrepreneurship. The entrepreneurial function in the Chagga case was carried out by missionaries, government, and cooperative officials who introduced and fostered coffee growing. The Chagga were able to respond to obvious benefits that would result.

Wittogel's specific views of the Chagga as oppressively hierarchical were incorrect because he was led by his model of a "hydraulic society" to an unbalanced assessment of socialization among the Chagga. Reward for the individual was stressed in traditional Chagga teaching, and private wealth was one of three basic Chagga ambitions.[68] The chief was lavishly supported because his wealth and power were symbolic of each mtaa, but he was no divine despot, as shown by the turbulence of Chagga politics and the inability of any one mtaa to gain ascendency.

Therefore, much of the economic success of the Chagga can be understood in traditional terms and is attributable to their adaptability and to their ample traditional desire for an enjoyable life. According to Dundas, their success had little to do with "the Protestant ethic."

> The cultivation of mbeke (beer), a much condemned industry, has been responsible not only for a remarkable

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[68] Raum, Chaga Childhood, p. 233.

> skill in artificial irrigation . . . but it has directly promoted social development of a relatively high order; hence the Chagga present an unprecedented instance of economic and social welfare vigorously furthered by the vice of alcoholism.[69]

Furthermore, there is considerable evidence to show how peripheral coffee is to the central Chagga values. There is no attachment to the crop to compete with the deep cultural commitment to banana and eleusine growing. The Chagga never drink coffee, and see it merely as cash. Von Clemm's research substantiates this point, which is obvious to anyone who talks to any Chagga at length. He collected forty essays from 14 to 18 year old boys on the subject of crop choice and relative value. Only 28 per cent of the boys preferred coffee to traditional crops, and then specifically because of its cash value.[70] The "kihamba" is still the central institution, equivalent to the French "foyer," even for those who hold paying jobs in Moshi. They prefer to return each night to their homes "among the bananas" (notably not "among the coffee trees"). In many ways the Chagga are still a traditional people, who shun urbanization and are suspicious of their central government. One of the few traditionalist political parties in Tanganyika was the Chagga Progressive Party. The Chagga Paramount Chief was one of the stronger of the few anti-TANU elements during the 1950's. And two of the recent Kilimanjaro elections (Rombo, Vunjo) were dominated by extremely traditionalistic features such as birthplace of

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[69] Dundas, Kilimanjaro . . . , p. 262.

[70] von Clemm, op. cit., p. 115.

candidate and "husband," and the naive view that the candidate who lives farther away is more likely to extend the macadam road.[71]

The Chagga have been exposed to continual cultural infusion which supported their earlier agglomerative historical origins. In comparison with their neighbors, they lived well enough to afford leisure, which became an important part of their social system. Hydroagricultural economy threatened to destroy their original Bantu egalitarianism, but cultural infusion from pastoral peoples prevented rigid social hierarchism and centralized political despotism. Traditional upbringing stressed not only submission to authority and compliance, but also significant doses of competitiveness and assertion. This combination created an adaptive people.

Coffee cultivation grew popular because the Chagga saw its use in furthering their own most important cultural elements and values, and were adaptable enough to do something about it.

Other Tanzanian peoples have been in contact with more advanced societies only to be left unchanged by the adventure. In some of these cases, environmental blocks were too harsh to overcome, both as obstacles by themselves and as perpetuators of deterministic attitudes. Thus the Wazaramo,

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[71] P. H. Johnston, "Chagga Constitutional Development," Journal of African Administration, vol. 5, no. 3 (1953), pp. 136-137, and Basil Mramba, "Localism and Nationalism in Chagga Politics," EAISR Papers (Makerere, 1966).

who have been in more direct contact with the more advanced cultures of the Coast than have the Chagga, still have difficulty accepting the benefits of modern education which are more quickly obvious to other tribes.

The argument has led directly to the relative importance of human factors when compared to ecology, and of certain human factors compared with others. The Chagga case indicates that achievement motivation was less important than ecology, history, and the nature of Chagga traditional society. Among my sample, psychological propensities for achievement motivation are now too weak to discriminate Chagga from the other subjects, and may never have been strong enough to do so, even during the period when coffee was first introduced and accepted by large numbers of native growers.

It is clear that with a process as complex and multivariant as economic change, formal hypotheses based on one factor are nearly impossible to substantiate. Our knowledge of economic development is forced, in most instances, to advance more by inventory of related factors rather than by rules of cause and effect.

VII

IMPLICATIONS FOR TANZANIAN DEVELOPMENT

The Government in Dar es Salaam is concerned with an overall population that has little to show for years of exposure to the cash economy. Planners feel that this population will require largely government-controlled solutions to change. To stimulate the achievement motive, even if this had been located as a distinguishing feature of the Chagga, would have been one thing.[1] To recreate the historical and ecological factors that promoted Chagga adaptability is obviously impossible, even if Government were inclined toward the individualistic, personal-interest solutions which made the Chagga more wealthy than their neighbors. And it is this proviso which limits the usefulness of McClelland's recent technique of teaching achievement motivation to adults. McClelland, et al., have been experimenting with the stimula-

[1] If the test results had shown high n Ach levels among the Chagga, a course of action for Tanzanian planners would have been implied: to study the sources of that motive and then to promote it among other peoples through educational and social planning. Early stress on achievement and independence training has already been suggested as an important method of raising achievement motivation levels. For a detailed discussion of these questions, see Atkinson, et al., Motives . . . , Part IV.

tion of achievement motives in Indian, American, and Mexican adults through a series of seminars, working under the assumption that "talk of achievement . . . tends to increase the frequency with which individuals think about achievement."[2] This valuable research has suggested twelve propositions about the growth of adult achievement motivation,[3] and his data have shown preliminary success in the form of an "activation rate" that promises to increase entrepreneurial deeds among two-thirds of the seminar participants.[4]

McClelland's current research is important to a nation like Tanzania because of its relationship to the crucial problem of motive stimulation. His research may show that small group discussion of achievement problems can produce "converts" away from deterministic attitudes (in which development is autonomous from the individual) toward convictions of personal competence in the development process. The con-

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[2] David McClelland, "Toward a Theory of Motive Acquisition," American Psychologist, vol. 20 (1965), pp. 321-333.

[3] Ibid., p. 324f. These important propositions can be summarized as follows: People must believe they can develop achievement motivation before it can effectively be stimulated. They can then be successfully taught the definition of that motive by taking the TAT for need Achievement and by learning to score their own and other peoples' results, which helps them to further conceptualize their own motivations and to see the types of activity that lead to actual achievement. Gradually the participants' own daily actions are seen in the light of their own expanding knowledge of achievement motives. This process is aided by the writing of a document containing the individual's "goals and aims for the next two years," and by keeping a record of his occupational progress. Membership in the seminar, and friendly interest by its members further the process.

[4] Ibid., p. 332.

tent of achievement motivation as McClelland is teaching it in India and Mexico may be unacceptable to Tanzanian development ethics, and may require modification. However, the method may be highly appropriate if it can "convert" slogan-parroting young adults (who balk at nation-building schemes like National Service the moment they discover that these methods apply to themselves).[5]

If the Chagga are to be used as an example, culture shapers in Tanzania should attempt to foster maximum adaptiveness among the people. The Chagga have shown that adaptiveness was more important in their development than deep-seated achievement motive. The differences between Chagga farmers and students are instructive. Farmers retain considerable traditional orientation: election campaigns, in which issues and problems of national development were previously decided and candidates' abilities to carry out those policies were the only possible debate topics, were dominated by parochial issues.[6] Nor have years of effort convinced the Chagga farmers that reducing banana-tree shade cover will raise yields from coffee.

However, of 23 Chagga students informally questioned at the University College, Dar es Salaam, 17 (74 per cent)

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[5]The idea of conversion is important in understanding the nature of McClelland's seminar-type approach to teaching achievement motivation to adults. Content aside, McClelland's method could be compared to that of the Communist cell, as "one of the most effective ways to sustain changed attitudes and behavior." (Ibid., p. 330.)

[6]Mbioni, Election Issue (Dar es Salaam, 1965).

viewed traditional tribal values as "undesirable to emulate in preference to the priorities of national development."[7] While Chagga university students have been frequently critical of contemporary government policies, those with whom I talked (both at Dar es Salaam and at Makerere) seemed as committed as their fellow students to national aims. TAT responses from Chagga secondary school students also showed an awareness of new national targets for Tanzanians. These students demonstrate that Chagga adaptability may bring many members of that tribe to the new national goals just as it led their ancestors into coffee growing. The students have accepted (at least rhetorically) the idea of nation-building.

The value claimed for the methods of McClelland's recent research does not necessarily infer any incompatibility between Tanzanian "Socialism" and the individual entrepreneurship and competition associated with economic development in the Western world. If achievement motivation tests are to be used again in Tanzania, the cooperative nation-building ethic should somehow be brought more completely into the basic scoring system. However, whether achievement motivation is deemed competitive-individualistic, or cooperative, it must show motivation in the individual (qualify as a "need" scored by actual or implied anxiety or long term goal). The Tanzanian responses seldom demonstrated nation-building coupled with personal involvement. The responses usually took

[7] In November and December, 1965. Unfortunately, equivalent data for farmers were not obtained.

the form of parroted slogans identical to those being spread by Party and Government leaders over mass media or in large meetings. Measuring achievement motivation in Tanzania therefore cannot overlook questions of human nature; whether people can commit themselves personally to cooperation as they can to personal gain.

Because the general policies seem, however, to be irreversible,[8] only one question remains. How can a population best be stimulated toward personal commitments toward achieving those goals? Since achievement motivation as here defined and measured is no stronger among the most economically successful tribe (Chagga) than among a more typical example of the nation as a whole (Bondei), attention should be devoted to the question of adaptive capacity, and to a political communication system that produces personal commitment to development values. Creating such adaptability among other Tanzanians may be difficult, especially if a "two-step" theory of communications (mass media or indirect plus personal or direct) applies to African politics. The human element of economic change should then be seen as a question of widening the horizons of traditional peoples through a combination of mass media (step 1) and development-committed cadres (step 2) who spread the ideals of cooperative effort, and who inform

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[8] For a recent affirmation and clarification of Tanzanian Socialism, see TANU National Executive statement on "The Arusha Declaration and T.A.N.U.'s Policy on Socialism and Self-Reliance," February 5, 1967, reported in Africa Digest, vol. XIV (April, 1967), p. 93.

the masses of new techniques.

These solutions are already being tried in Tanzania, as the decision to politicize the civil service demonstrates. The only forces capable of creating these wider horizons and greater adaptability are the technically trained administrators, and it is just this group whose desire to identify with the national goals may be weakened by their own rapidly expanding interests, needs, and feelings of political competence. If the recent negative response by University students to national service through Nyerere's two-year program is any indication, the problem of a politically committed and technically capable elite commands continuing attention.[9]

The Chagga subjects showed wide recognition of present national goals, but without much personal commitment. This fact adequately explains Chagga failure to demonstrate exceptional achievement motivation levels, and is instructive for the future. The Chagga (with their atypically hospitable environment) needed only the ability to adapt, even without changing the bulk of their traditional values. Now that land is running short in the coffee growing areas, there are signs that the tribe will be called upon to show more adaptiveness just to maintain present levels of income. In addition, falling coffee prices may force them to diversify.

Considerable personal commitment will be necessary to

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[9]The National Service "is not service in the army but in developing the countryside, the last thing the students reckoned their abilities entitled them to." (Economist, November 26, 1966.)

development of the remainder of Tanzania, and even, perhaps, to continue the earlier progress on Kilimanjaro. One hopes, for Tanzania's sake, that philosophers of human nature who have seen man as naturally selfish and individualistic have no monopoly on the truth, because successful development in that country is being made to depend on personal commitment to a selfless, cooperative ethic.

According to Nyerere's version of African Socialism, a traditional sense of responsibility for other tribe members provides a logical basis for the cooperative nature of present development plans. He argues that Socialism has always been different in Europe, where "two revolutions (Agrarian and Industrial) planted the seeds of conflict within society."[10] This same historical background, Nyerere claims, makes it difficult for Westerners to understand either traditional Tanganyikan "Ujamaa" or the logic of present development planning.[11]

> The foundation, and the objective, of African Socialism is the extended family. The true African Socialist does not look on one class of men as his brethren and another as his natural enemies. . . . He rather regards all men as his brethren--as members of his ever extending family.[12]

Recent months have provided evidence of the substance

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[10] J. K. Nyerere, "Ujamaa: the Basis of African Socialism," in W. H. Friedland and C. G. Rosberg, Jr., African Socialism (Stamford, Cal., 1964).

[11] Fred G. Burke, "Tanganyika: The Search for Ujamaa," in Friedland and Rosberg, ibid., Ch. 2.

[12] Nyerere, "Ujamaa . . . ," p. 246.

of Nyerere's African Socialism. Villagization (the resettlement of Africans on new land accompanied by high capital infusion) is being reappraised, but with the intention to continue it in some form. More politically explosive aims are also being given attention, such as the nationalization of banks and businesses,[13] and the elimination of Asian commercial middlemen. To those who would block the path, Nyerere has recently given this pointed warning. ". . . as the commander in chief of the Tanzanian armed forces, I will not safeguard the exploiters' interests."[14]

If it had been shown that cases of economic success in Tanzania are all accompanied by high achievement motivation, there would have been ample grounds for believing that the Nation's stress on the cooperative values of Ujamaa may restrict rather than promote development. However, by itself, the Tanzanian preference for cooperation does not automatically exclude a place for achievement motivation rooted in competitiveness, for the following reason: the competition of McClelland's "high achiever" type does not have to be directed against other people. It can instead take the form of competition against some standard of excellence, or aspiration for some long-term goal; i.e., a career.

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[13] Economist, "Nyerere takes the banks," February 11, 1967; New York Times, "Tanzania's moves worry neighbors," February 19, 1967.

[14] New York Times, "Indians are upset in Eastern Africa," February 5, 1967, "East Africa wonders about Nyerere course," February 26, 1967, and "Tanzania's Banks are nationalized," February 7, 1967.

But achievement motivation, as defined, is personal and individual. Whatever form the sense of competition takes (versus other individuals or toward societal goals), it must involve personal concern and anxiety. The danger of the "cooperative mystique" is that it may lower personal involvement by reducing the natural freedom of competition against others.[15] It may thus weaken the propensity to become psychologically involved in competition with self-imposed or societal standards of excellence.

In Tanzania, individual commitments to national development are endangered by the current total emphasis on cooperation. My research indicates that people now believe in a cooperative mystique whose roots are as understandable as those of the strong reverence for the leaders who brought independence. The result is a widely-held misconception that the same techniques that brought independence will automatically bring economic development. People are being told to "pull together" and any opposition is being suppressed. As Zolberg points out, while democratic rule is unlikely to be employed by Africa's "party-state" rulers (nor is it likely to be successful if applied), deepening authoritarianism is not likely to produce economic and social change as success-

[15] John Lewis has described the interesting situation in Communist China, where a heavily competition-oriented educational system is instilling appropriate values for economic and social development. He also points out that since adulthood brings the products of that education system into a predominantly authoritarian milieu, serious political discontent may accompany the economic advances. (J. S. Coleman, Education and Political Development [Princeton, N.J., 1965], Part III, Ch. 12.)

fully as it has in other parts of the world.

> . . . practically speaking, it is unlikely that an imitative authoritarianism would be as successful in Africa as it was in the original from which it is copied, not because African tyrants are necessarily less skillful than European ones, but rather because other conditions that contributed to the success of authoritarian rulers, such as the scale of the political community, its physical resources, and the cultural predispositions, are simply not met.[16]

In short, economic development may not be best accomplished through political methods similar to those successfully employed during the independence struggle.

Tanganyikan independence was secured by a few leaders who sensed that it was possible, and developed techniques to suit the challenge. The people followed enthusiastically, in most cases easily overcoming traditional political authorities who stood to lose from independence and political modernization. The obstacles of colonialism were easier to fight because of their distance from primary social units. A contribution to TANU or participation in a strike or demonstration enabled the Tanganyikan to answer the call of his leaders against the British. The newer enemy, poverty, is closer to home, and success will be elusive unless Tanzanians can be led to adopt economic changes. The techniques which were successfully employed in earning TANU votes and producing mass-rally support, exhortation by leaders of top and middle rank, are inappropriate to the job of changing long-held economic and social values. This is especially true if

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[16] A. R. Zolberg, Creating Political Order (Chicago, 1966), p. 158.

much of the communication flow is diverted to mass media so that they carry a major share of the burden of propagandizing the values of cooperative nation-building.

I argue that such emphasis may jeopardize the success of Tanzania's economic development by limiting the degree of personal involvement felt by the people toward development goals. Some of my data indicate the lack of individual commitment to those goals. My thesis is not an obscure one. It is an essential truth which is drowning, in the Tanzanian context, in a sea of "Ujamaa": autonomous economic activity is necessary, especially when the resources that would allow replacing it with government-directed forced development are so meager. More than any other factor (as President Nyerere himself has pointed out) Tanzanian development will depend on vigorous commitment by a high proportion of countrymen. According to the Arusha Declaration of TANU, "The energies of millions of men in the villages and thousands of women in the towns which are at present wasted in gossip, dancing, and drinking, are a great treasure which could contribute more towards the development of our country than anything we could get from rich nations."[17]

For this task, the dynamic of interpersonal competitiveness must not be ignored or replaced by value systems which are less capable of stirring people to action.

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[17] Africa Digest, vol. XIV (April, 1967), p. 94.

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