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ABSTRACT

Psychological modernity implies the existence of a set of individual personality characteristics that exist across cultures and form empirically identifiable clusters of specified attitudes, values, and behaviors which define humanity. Formal, explicit school programs, as well as learning experiences provided by peculiar social organization features of schools, are of demonstrable relevance to the study of psychological modernity. At least 10 modernity studies have now empirically established the formal education process as the most important variable effecting modern orientation in individuals. Two findings are particularly striking: (a) consistency of correlations among age, sex, socioeconomic status (SES), and other background items; and (b) remarkable consistency of the findings within countries where studies have overlapped. In all the studies, it was found that the longer individuals are exposed to school, the higher their modernity scores. The data show mixed findings concerning the influence of schooling on personality modernization when controlled for sex, SES, and measured academic performance. The implications of modernity findings for the role of schooling in the development process are dependent on the unexplored nexus between modern attitudes and values and their behavioral manifestations. (Author)

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**Education, Individual Modernity
and National Development:
A Critical Appraisal**

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I. Education and Psychological Modernity: The Nature of the Empirical Findings

The concept of individual modernity has elicited increasing attention in the last ten years from a growing number of individuals concerned with the nature of the development process in the modernizing countries. The work of Kahl (1968), Dawson (1967), Doob (1967), Schnaiberg (1970), Portes (1973a), Inkeles and Smith (1974) and others, persuasively argues the existence of a psychological syndrome of modernity characterized by both a mental flexibility in coping with new environments and situations and by the external, behavioral manifestation of those psychological orientations.

Development literature dealing with education as a major ingredient of social, structural change at the macro level is abundant. However, the literature on the role of education in fostering modern individuals on a society-wide basis has been quite sparse prior to the last few years. Our purpose here is to review this growing body of research for empirical evidence linking education to the emergence of modern individuals; second, we hope to piece together a picture of how schooling is thought to modernize individuals, and, third, we will examine the behavioral correlates of modernity especially as these bear on broader questions of national development.

Modernization research has long suffered for lack of a universal definition and lack of agreement on the proper level of analysis. Most of the modernity literature has focused on the pan-national (Nettle and Robertson, 1968), the social structural (Lerner, 1958; Levy, 1966) and the communal (Sjoberg, 1964; Geertz, 1963). Beginning

In the early sixties studies dealing with psychological or individual modernity grew in number and sophistication. At the center of this effort lay a concern for modern man - is he an empirically identifiable reality or a mere abstraction? The question has been argued with insight and alacrity on both sides; the case for the latter best evidenced in the writings of Bendix (1967), Armer and Schnaiberg (1972), Tipps (1973), Portes (1973b) and Codwin (1974). While cognizant of the critics of modernization theory, and more specifically the concept of psychological modernity, we subscribe to the conception of the modern man set forth by Inkeles in 1973.

The modern is defined as a mode of individual functioning, a set of dispositions to act in certain ways. It is, in other words, an "ethos" or a "spirit" in the sense in which Max Weber spoke of the "spirit of capitalism." (Inkeles, 1973: p.61).

This modernity construct implies the existence of a set of personality characteristics which exist across cultures and which serve to separate the modern individual from his more traditional peers. Furthermore, it assumes that these characteristics are more likely than not to occur in clusters within individuals and that they are empirically identifiable. In short, the concept of individual modernity hypothesizes that these clustered personality traits form a cross-culturally valid syndrome. The closer these measured attributes approach the theoretical model the more modern the individual is judged to be. In the Inkeles and Smith formulation the modern man is distinguished from the traditional man on the basis of, among others, his informed contact with the outside world,

his sense of personal efficacy, openness to new experience, readiness for change, education and occupational aspirations, and relation to traditional authority. Other topics investigated in defining the modern personality are attitudes toward kinship and family, women's rights, and birth control or restriction of family size. Taken together these themes form a reasonably coherent portrait of a kind of individual who has been found to be remarkably well suited, that is, competent, to the exigencies of contemporary urban-industrial society.

Modernity, then, is seen as a set of attitudes, values and related ways of acting occasioned by participation in the institutions of modern, industrial society.

The school has long been suspected of accomplishing more than the teaching task explicitly assigned by the formal curriculum. It is the hidden curriculum--that which is unintentionally transmitted to students in school as a by-product of formally structured academic study--that has recently captured the interest of sociologists and psychologists. In his 1959 article, Parsons noted the significance of the schooling process as an unwitting factor in the unequal allocation of adult status and further that the pressures and strains of the schooling process serve to legitimize this distribution of social roles. Dreeben's (1968) insightful work, On What is Learned in School, which explores the normative outcomes of schooling, parallels that of modernization theorists by arguing that Independence, Achievement and Universalism are three important by-products of the schooling experience. Since these three traits

find their way into almost all the attitudinal scales forming indices of modernity, modernity researchers have, in a sense, attempted to affirm Dreeben's contention that the school is uniquely capable of producing socially significant personality traits.

The pioneering study in establishment of the empirical link between education and psychological modernity was Daniel Lerner's, The Passing of Traditional Society, conducted in six Middle Eastern countries in the 1950's. His work distinguishes itself from the subsequent studies to be examined in its emphasis on the interaction of environmental factors and psychological dispositions as a producer of modern individuals. Lerner hypothesized that geographic and social mobility gave rise to the formation of empathic men - empathy being the psychological mechanism which underlies and is reinforced by urbanization, literacy, and media participation; the last two being theoretically and empirically highly correlated (.47) with the educational process.

It was Joseph Kahl's (1968) study conducted in Mexico and Brazil, however, which provided the first convincing empirical evidence of the strong association between formal education and individual modernity. Kahl postulated that common institutions are developing in countries all over the world in response to pressures to industrialize, bureaucratize, and rationalize and that societies are responding in similar ways to these pressures. Kahl's data from Brazil and Mexico revealed a "Core of Modernism" which consisted of the following components: activism, independence, urbanism,

individualism, low community stratification, mass media participation and efficacy. First building a series of profiles of individuals based on separate factor derived scales for each of his variables, Kahl later joined the subscales to estimate the level of composite modernism. The results of the study showed that not only were the patterns determining levels and types of education the same in both Brazil and Mexico, but that level of schooling correlated with modernity scores amazingly well in both countries (.55 in Mexico and .57 in Brazil). In addition, item-to-scale correlations were almost identical in the two countries and scale reliability was .76, lending considerable credence to the validity of the measuring instrument.

By far the most ambitious and meticulous effort attempting to demonstrate the relationship between psychological modernity and institutional structures is the work of Alex Inkeles and David Smith. (1974) The sample for their study consisted of a total of nearly 6,000 men drawn from six countries yielding a heterogeneous mixture of cultural, social, and institutional characteristics representing different stages of national development. The countries from which the sample was drawn are Argentina, Chile, E. Pakistan, India, Israel and Nigeria. At the onset of the research project, Inkeles identified ten different kinds of social institutions as belonging in the category "modern". At the head of that list were the school and the factory. Inkeles' thesis was that important personality characteristics are formed in a manner congruent with the dominant emphases of their environment,

particularly the institutions which surround them. He therefore reasoned that if those institutions and men's experiences within those institutions were standard across nations and cultures, men in touch with those institutions should be drawn closer together in terms of their values and attitudes. In short, Inkeles and Smith viewed institutions such as the school and the factory as non-culture bound organizations of value transmission which would, over time, make people more and more alike as they provided individuals from different cultures with experiences which were increasingly identical. As Inkeles states, "What is significant about the factory is that men's environment, as expressed in the institutional patterns they adopt or have introduced to them shapes their experience, and through this their perceptions, attitudes and values, in standardized ways which are manifest from country to country, despite the countervailing randomizing influences of traditional cultural patterns." (Inkeles, 1960; p.2)

Likewise, organizational features of the school provide similar opportunities for learning modern attitudes. As Dreeben notes, the school brings together students with diverse backgrounds, and provides them with a leader in the person of the teacher who is expected to serve as a model of rationality, who stresses universal standards of performance and competence, and who justly distributes rewards through the grading system. (Dreeben, 1968) Furthermore, the nature of the student role in school stresses independence and places value on the sense of efficacy.

Inkeles and Smith developed their syndrome of modernity from

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a combination of items taken from three distinct categories. Their analytical category contained attitudinal and value questions which were newly created for their project. The topical questions were also attitudinal and value oriented but were ones that had been used in previous studies and deemed significant by the Harvard group for comparison and contrastive purposes. The third category - behavioral - is where the Harvard study went beyond previous modernity research. The behavioral series of tests required that an individual show that his modern value orientations manifested themselves in corresponding forms of behavior and thus completed the theoretical link in the causal chain connecting structure, values and behavior. In contrast to the Kahl study, Inkeles and Smith collapse all of their measures into one multi-dimensional scale of modernity. (Inkeles and Smith, 1974; Ch. 7 & 8) During the course of the study a number of multi-dimensional scales were developed, the most successful for cross-national comparison purposes being the scale labeled OM-500. Ten major variables stood out in the study as being of potential consequence in the development of psychological modernity. The ten variables were formal education, months of factory experience, objective skill, mass-media exposure, number of factory benefits, years of urban experience since age 15, urbanism of residence, modernity of home-school setting, father's education, and consumer goods possessed. The results of the correlations of these variables with the OM-500 scale are clear and unequivocal. Formal education was the most highly correlated

of the ten variables with the modernity scale . . . of the six countries of the study with a mean correlation of .53, followed by mass-media exposure (.44), consumer goods possessed (.35), ~~objective skill~~ (.27), month's factory experience (.25), and father's education (.24). The correlation between education and modernity was surprisingly consistent across all countries in the study: Argentina (.60), Chile (.51), E. Pakistan (.41), India (.71), Israel (.44), Nigeria (.52). (Inkeles and Smith, 1974: p.125) What makes the findings even more surprising is that the sample was limited to individuals who for the most part had less than eight years of schooling. Thus, from the basis of the findings and on projecting the theory to a normally distributed population, one would expect to find that the correlations increase given a random sample.

Furthermore, the Harvard study found that among men who had the least education within their country, less than 10% were classified as modern on the basis of their overall modernity score. Likewise, the most educated men in each country consistently (80%) scored high on the modernity index. Given different numbers of years of education in each country, one might expect that the graph of the line illustrating the relation between modernity and education would vary, especially at the extremes. Such is not the case, however, as the slope turns out to be almost linear.

The correlation between education and modernity for factory workers remains high both in terms of the individual countries

and the mean for all six; controlling for mass media (.425), factory experience (.50), mass media and factory experience (.425).

(Inkeles and Smith, 1974: p.137) All in all, Inkeles and Smith conclude that for all six nations, schooling seems to add approximately two points per year to a man's modernity score on a familiar scale pattern running from 0 to 100. Their data show the school to be 2 to 3 times as effective as the factory in producing increases in modernity levels.

A number of studies published in the last five years have gone beyond establishing empirically the link between formal education and modernity by attempting to isolate the peculiar structural characteristics of the school that make it such an effective socializer of modern values. In 1965, Michael Armer and Robert Youtz interviewed 591 seventeen year old males in Kano City Nigeria. (Armer and Youtz, 1971) The authors hypothesized that formal schooling shapes experiences of youth and, in turn, leads toward standardized changes in their value orientations in a direction congruent with the dominant value emphasis of the educational environment. Cross-tabular analyses provided evidence of clear and consistent educational influence on modern value orientations which were largely independent of selectivity factors and other alternative modernizing forces. Their data show that 83.8% of those individuals with some secondary education were scored high in terms of individual modernity while 62.2% of those with no education scored low. (Armer and Youtz, 1971, p. 611) The effects were found to be quite uniform

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across different categories of youth, but variable across different value orientations. Of particular note was their suggestion that the school curriculum may be more important than organizational aspects of schools in shaping modern attitudes. Needed research would investigate the effect on modernity levels of schools which are organized along modern principles but which still teach very traditional subjects by very traditional means.

Holsinger's Brazilian study provides additional evidence for the causal link between schooling and increased modernity. Holsinger hypothesized that schools, because of their peculiar structural arrangements and the behavior patterns of teachers, provide pupils with certain experiences largely unavailable in other social settings, and that these experiences represent conditions conducive to the acquisition of modern values. (Holsinger, 1974) Interviews were obtained with 2,531 children representing a stratified random sample of all 3rd, 4th, and 5th grade classrooms in the Federal Republic of Brasilia. Replication interviews were conducted with an 11% subsample five months after the first interviews in April, 1971. Parents and teachers of the 274 subsample group were also interviewed. In addition modernity scores were obtained from interviews with 300 non-school children who were selected and individually matched to the school sample by age, sex and SES. The questionnaire used in the study contained 45 modernity items from the Smith-Inkeles OM-500 scale. Evidence was found in favor of the following hypotheses:

1) The longer children have been exposed to schooling, the higher are their modernity scores. In fact, the modernity scores showed a statistically significant and quite uniform increase of approximately five points from grade to grade. Surprisingly, Holsinger's data indicated that level of modernity increased only slightly less from year to year than did Information Test (knowledge of political figures and capitals) scores. Stated differently, the schools did nearly as well at their sub-conscious, informal and implicit task of modernizing as they did in meeting their explicitly stated task of imparting certain kinds of knowledge, including that of important political figures and places. In addition, Holsinger found that during the five month period between interviews, the mean modernity level for all children increased 5.4 points, significant at the .001 level. To be sure, one must exercise caution in attributing this increase solely to the modernizing effect of the school for a host of other influences could undoubtedly have been operating independently or in combination to contribute to the difference. Nevertheless, the findings suggest the need for longitudinal studies examining, with greater precision, the effects of schooling on modernity.

2) The modernity scores of elementary school children were higher than those of comparable age and SES non-school children. The research showed that the non-school children, divided for purposes of comparison into three groups according to the mean

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age of the school sample, did not grow more modern with the passage of time. (Holsinger, 1974: p. 39)

3) The more modern the structural arrangements of the child's schooling environment are judged to be, the higher are his modernity scores. On the modernity scale which varies between 0 and 100, a baseline score of 39.5 was established for the average child not in school. On the average, the third graders scored 53.5 on the scale, with 58.1 and 63.7 being the mean modernity scores for fourth and fifth grade students respectively. On this basis, an average modernity point gain of approximately 5.1 (compared to 2.0 in the Inkeles and Smith study) is determined for every year in school.

4) The positive association between schooling and individual modernity could not be explained or interpreted by any of the alternative modernizing forces in the design such as age, sex, non-verbal intelligence, SES background, media exposure, school achievement, urban residence, parents modernity or teacher's modernity.

Several things are suggested by Holsinger's data. First, it appears that there may be a ceiling effect on the level of modernity that schooling is able to produce. In other words, it is probable that beyond an as yet undetermined point in the schooling experience, increased levels of education provide decreasing increments in modernity scores. Most of the research thus far conducted has dealt with subjects at the secondary level or below and has not,

with the exception of Holsinger's five month replication of interviews been longitudinal in design. It would be reasonable to assume a priori that education will not provide increased modernity scores of five additional points per year of formal education received ad infinitum. It is doubtful, for example, to expect an individual with a Ph.D. to score 20 points higher on the modernity scale than a Baccalaureate degree holder. This raises the question of differential returns to schooling at its several levels. Obviously, further research along these lines could have important consequences for educational planning and resource allocation in the developing nations. Other important studies of the relationship of schooling to psycho-social modernity are found in Inkeles and Holsinger (1974).

Following the notion (cf Inkeles, 1974) that the modernizing effects of schooling follow not so much from its formal curriculum but from its informal, implicit and often unconscious program it seems to us imperative to determine in a systematic way what are the facets of the school environment that make it a better or worse agent of modernization. Are there measurement procedures capable of capturing subtle variations in learning environments? And, is there a theory of learning that might give us greater purchase on the problem of how school environments accomplish a teaching task?

These and related questions are examined by Holsinger (1974) who concludes that the quality of the schooling environment is an important predictor of modernity and exerts an impact independent of sheer amount of exposure to schooling. It may well be that the most important fact about schools in terms of their modernizing potential reside in those features that are endemic to all schools. Still, there is now hard evidence suggesting that the quality of the school environment is responsible for as much as 20% of the total variation in modernity scores in children.

A. Sex Differentiation and Modernity

One frequently noted characteristic of developing nations is the seeming inequality of sexes, at least as far as the public sector is concerned. It would not be surprising therefore, to expect that overall, women, who have a lower participation rate in modernizing institutions and whose subjective status is one dimension of the modernity test itself, should themselves perform less well on modernity instruments than men. But, the question must be asked whether once in contact with modernizing institutions they persist as more traditional in outlook? In other words do experiences in modern structures have a differential modernizing impact on males and females?

Darell Dubey's 1970 study of non-Arabic Teachers' Colleges in three northern Nigerian states concludes that "women in every category are less modern than men of the same (educational) area." (Dubey, 1972) However, Holsinger found that elementary school girls in Brasilia out-scored the boys in all three grades by a significant amount. An explanation for the finding may be that since many fewer girls than boys are sent to school in the first place, those who do gain access are from the outset more modern. In addition, the situation may be compounded through the effects of yearly self-selection and accompanying predispositions toward modern values and success.

Ineke Cunningham's study of the entire student body of a metropolitan Puerto Rican high school during 1967-8 seems to favor this interpretation. She reports that "Sex differences in modernity levels among students in this sample are nonexistent." (Cunningham, 1974) Unfortunately, most of the modernity studies have utilized either all, or predominantly male samples and thus a good deal of investigative research remains to be done in terms of differential performance on modernity tests by sex.

B. SES and Attitudinal Modernity

No one doubts that a child's original social matrix, his parents most especially, his peers and life style generally, exert a powerful influence over the kinds of things he will ultimately come to believe, value and prefer. Since these early socializing influences

can be summarized with minimal distortion by referring to the socioeconomic status of the child's family, one might expect that SES would be a powerful alternative modernizer, rivaling the effects of school itself as a predictor of attitudinal modernity. Most of the research to date has investigated this obvious relationship and some of the studies have been conscious of the possibility of a further confounding effect; that introduced by the probable fact that high SES children are encouraged more, and in fact, are more successful at competing for scarce classroom seats. Moreover, high SES children do not succumb so easily to the forces which characteristically produce high dropout rates in the LDC's. It is possible then, for reasons unrelated to schooling per se, that modern individuals will be found with increasing frequency in each successive grade level. If SES is highly correlated with modernity, what might appear to be a school effect may in reality be nothing more than the influence of family status.

Two of the modernity studies (Armer and Voutz, 1971; Holsinger, 1974) look within categories of SES to see whether the association of education with modernity still persists. Both report that it does persist and at substantial and statistically significant levels. In terms of partial correlations, Holsinger found that by controlling for SES, the correlation between schooling and modernity dropped only slightly from .43 to .39. One might conjecture, however, that the school could serve as an especially good modernizer of certain groups or categories of individuals to the exclusion of

others. Some social scientists (eg., Parsons, 1959) have speculated that school may serve to affirm the values of "middle class" children while lower class children are taught social parameters concomitant with their status rank. On this point, the evidence is divided. Armer and Youtz report that "to the extent that a tendency exists, it is toward a stronger association among higher-status, more intelligent respondents with literate, more educated fathers." (Armer and Youtz, 1971: p. 617)

Arguing on the other side of this question, Richard Sack's study of Tunisian adolescents found that "education is more effective in contributing to modernity for those from low SES backgrounds." He reasons that this may be so because, "perceiving the link between formal schooling and acceptance into the modern sector, the lower SES individuals are more likely to accept the values projected in the process of formal schooling." (Sack, 1974: p. 109)

Holsinger presents data on modernity scores by SES and grade in school which show that low SES children are precisely those who are benefitted most by the school experience. This does not extenuate the importance of SES as a determinant of early childhood modernity for, as Holsinger points out, his data reveal the fact that in the Brazilian Federal District, high status third graders are nearly as modern (mean modernity score of 63.8) as low status fifth graders (64.5). (Holsinger, 1974: p. 40)

C. Modernity and Academic Performance

Both Cunningham and Holsinger studied the association between school achievement and modernity scores. Cunningham admits that grades may not well reflect a student's academic ability but argues that they are at least a reflection of his performance within the educational system and therefore his response to local educational policy. She found a "highly significant positive correlation between student modernity and grade point average" and that this association was stronger than that between parental modernity and student's own modernity score. (Cunningham, 1974: p.55) Holsinger, however, found near zero correlations between modernity scores and grade point averages in four subject areas. On the other hand, five Information Test items which closely approximated an achievement test in political geography showed very high correlations with modernity scores. Aside from casting further doubts upon the validity of grade point averages, these combined findings lead us to speculate that the modernity exposure implicit in the schooling experience "takes" best when students are highly committed to their classroom assigned tasks.

In summary, with the exception of several studies (Armer and Schnaiberg, 1972; Suzman 1974, 1975; Stephenson, 1968) all of the modernity studies have been conducted in developing nations and all have shown education to be one of the most important, if not the most important variable, institutional or background, contributing to the acquisition of what we have called psychological modernity. We believe the evidence clearly indicates that psychological modernity is a by-product of the formal schooling process in the developing nations.

III. Psychological Modernity and National Development

A substantial body of evidence points to the conclusion that education, in the formal sense, is responsible for producing affective changes in its clientele. While the precise mechanisms whereby the school accomplishes this task have yet to be fully explicated, the unwritten curriculum of modernity acquisition appears to be as successful as the formal agenda of reading, writing and calculating. One tantalizing question awaiting further research concerns the nature of the incremental changes in individual modernity that schooling seems to foster. The question is whether psychological modernity is tied to educational level, or whether a uniform and linear association exists with schooling exposure independent of grade level. Some corroborative evidence favors the hypothesis that a certain minimum number of years of educational experience is necessary to produce a radical behavioral change in an individual amenable to major psychological and value reorientation. Williamson's research on fertility values is such an example and indicates that education's influence on the manifestation of modern behavioral patterns is felt only after a minimum of primary schooling has been achieved. (Williamson, 1970)

In the same vein, researchers must take heed, especially as it may affect an individual's receptivity to structural influence, of the Piagetian paradigm which postulates that non-cognitive development transpires by stages - primarily in children from ages 5 to 16. Lawrence Kohlberg and Jane Loevinger have also written

on the complex interrelationships between "deep" psychological development and social structure focusing primarily on ego formation. (Kohlberg, 1971; Loevinger, 1970) Richard Suzman's work which draws heavily on Kohlberg and Loevinger's ideas is an interesting and promising effort towards establishing the theoretical, psychological dimensions of interaction between the individual and the social system. (Suzman, 1974, 1975)

Another important and obvious question concerns the longevity of psychological modernity when removed from supporting modern institutional settings. That is, it may cogently be asked how long the individual will retain his modern psychological disposition when he leaves school and finds himself surrounded by only traditional structural, environmental patterns and elements? The dilemma is acute in developing countries with characteristically early and high dropout rates where the length of time between the end of formal schooling and adulthood, when conceivably the modern individual would most benefit from modern values or contribute to the modern sector of the society, is considerable. Thus, it is entirely possible, that just as psychological modernity is incrementally acquired through sustained contact with formal schooling, so it may follow that the absence of such contacts witnesses a mirror image decrease in psychological modernity. But, perhaps there will be no loss at all. Only careful longitudinal studies will spell out the answer.

For these and other unexplored reasons, we are reluctant at this stage, to suggest the precise policy implications for the LDC's

of the individual modernity findings. Much research is still to be done at both the individual and societal level in describing the nature and implications of the acquisition of the modern personal ty. (For further elaboration of policy problems, see Holsinger, 1974: pp. 44-5)

Despite these limitations, however, it is still fruitful to conjecture upon the role of the modern individual in national development since, if the relation between schooling and psychological modernity is granted, the function of education in the developing nations can be seen in new and positive light. Few concepts in social science research have produced the degree of polemic as has that of modernity. Of basic issue in this question is a prevailing confusion over the interchangeability of the terms modernity, (more specifically the modern man), and national development. We do not see the terms as synonymous descriptions of the same process or phenomena, although we believe that the two are highly interrelated.

It is, hypothetically, at least, possible to have a society full of modern men without a high degree of national development since most definitions of development entail much more than the personal qualities of a national population. It is extremely doubtful, however, whether national development can proceed very far without a substantial corpus of modern men to plan, implement, and function within the institutional, political, and economic parameters entailed in the development process. In the first instance, one can conceive of a society filled with exogenously trained and

educated, metropolitan-wise, effacious individuals lacking the resources, the capital, and institutional framework necessary for development to take place. On the other hand, it is unlikely that favorable structural conditions and physical and financial resources will give rise to development on a national basis without a substantial body of modern individuals in the population. It is interesting to note that it is in precisely those geographical proximities and in those public and governmental sectors of the developing nations where modern individuals are likely to be found that one finds the locus of modern institutions and national wealth. This is a crucial point, for unlike the gradual emergence of a socially conscious, populist state which became the ethos of development in the West, most LDC's have been committed to the notion of populism from the moment of their inception. Thus, they are committed, at a verbal level at least, to a policy of promoting equity and egalitarianism. Consequently, attention must be paid to the diffusion of the institutional and economic payoffs of the modernization process. Educational expansion is one of the first payoffs of emergent nationalism to reach the local level - in part because schools are such tangible "evidence" of the political elites' successful development policies and concern for its constituents. The point is, that if schooling produces substantial affective and behavioral changes in individuals along the lines identified by Inkeles and Smith in their syndrome of the modern man, more effacious men attuned to the exigencies of bureaucratic,

impersonal, social institutions will be produced at all points of the social spectrum - i.e., wherever formal schooling has been established.

The important caveat in the modern man argument, as it relates to national development, is the tenuousness of the link between attitudes, values and actual behavior. The Inkeles and Smith study broke very important ground in this area showing a significant correlational relationship between modern values and self-reported modern behavior. Unfortunately the simplicity of their design is not persuasive. Thus, neither the nature of nor the extent of the relationships convincingly establishes that the psychologically modern man acts consistently on the basis of his newly acquired values, nor in what situations or under what traditional pressures he might not act in accordance with the behavior predicted by the index of his overall modernity score.

Of particular importance in this regard is the problem of dysfunction which is a source of social strain and civil strife so frequently witnessed in the developing nations. How much of the disharmony is attributable to the non-parallel development of modern individuals and modern institutional infrastructures? And conversely, how serious are the civil and economic consequences of having a plethora of modern institutions without modern men psychologically "fit" to function within them? In short, can one talk about modern institutions without discussing modern men? (and vice versa?) We think not. When social scientists refer

to national development, do they refer only to capital formation, institutional development, balance of trade, G.N.P., and kilowatt hours consumed or do they mean by development the transformation of social, cultural, and individual networks of action and interaction responsive to the demands of bureaucratic, industrialized civilization? To be sure, national development involves an industrial revolution of some magnitude that necessitates the application of scientific processes and knowledge to means of production and daily life. Existent within the social structure must be a group or class of individuals willing to lead the shift away from traditional patterns of life and who are willing to run the risks of change. But, at base, development necessitates the proliferation of modern individuals who are not only receptive to change, but who will make and apply innovations in both their personal lives and in their interactions with others. Formal schooling seems to be a sure, steady producer of this kind of individual.

The linkage between institutional and individual modernity is not a chicken or egg proposition as is so often decried by structural-functional apologists. Massive numbers of modern individuals in structurally traditional societies will not in themselves be able to accelerate drastically economic growth. But, as societies develop, there is a concomitantly occurring process of increasing differentiation requiring new kinds of social and psychological orientations on the part of those individuals par-

ticipating in rapidly expanding modern sectors of the society. Likewise, as the numbers of modern individuals participating in these new sectors increase, so does the speed, given the fiscal resources, at which modern institutions proliferate and become increasingly specialized. Hence, the process is a cyclical one; a symbiotic relationship between the structural and individual elements of a society. The history of national development provides ample evidence that although the process is one of mutual interaction, it is by no means strictly linear in the evolutionary sense. Efficacious self-selective adaptation, not evolutionary determinism, is the attribute which raises man to his unique status as a functioning as well as a functional organism. National development is a process fraught with setbacks and spasms of social turbulence. The difficulty in most development efforts is not that there is an inherent contradiction or juxtaposition between traditional institutions and modern institutions, or between the traditional and the modern man, but that the integration mechanisms within the social system are not fully developed or are poorly understood. The research reported in the first part of this presentation indicates that one highly productive mechanism of adjustment that deserves more attention is formal schooling. As a part of the national development formula, the essence of psychological modernization as a process which can neither completely unfetter itself from the force of tradition nor wholly syncretize the vagaries of modernity is beautifully captured by Clifford Geertz:

There is...no simple progression from 'traditional' to 'modern', but a twisting, spasmodic, amethodical movement which turns as often toward repossessing the emotions of the past as disowning them. (Geertz, 1973: p. 319)

In summary, the point to be emphasized is that formal education has been shown to produce affective changes in people in the form of individual modernity of a magnitude rivaling measurable cognitive gains. These affective outcomes are significant in that they bear strong face relationship to broader questions of social development. Modern infrastructures require psychologically adaptive, malleable individuals to inhabit them. These individuals in turn, offer sustenance to the continual expansion and differentiation of institutions in the political, economic and social spheres of national life. The key and still tenuous link in this interactive process is the nexus between the psychological and the behavioral. In other words, how well do one's dispositions and stated values translate into latent and manifest behavior promotive of developmentally relevant social change. So far, the evidence is meager, but points in a direction supportive of the hypothesized picture of the modern man. (cf. Miller and Inkeles, 1974; Williamson, 1970 regarding psychological modernity and fertility behavior) Further research in the area of the effects of schooling on individual modernity and national development should center on this question of behavior.

In short, what has been established by the modernity researchers is that the previously theoretically defined modern man is an

empirical reality. Formal schooling appears to be the single most important variable effecting the acquisition of modern personality dispositions: a strong sense of social and personal efficacy, a positive valuation of time, a willingness to accept new ideas, a desire to participate actively in communal and political affairs, and a conviction that the national application of scientific principles and technology can solve a wide range of human maladies.

If, in its essence, national development entails a betterment of the human condition, fitting individuals to live in an increasingly complex form of society, then psychological modernity appears to be of undoubted relevance and formal schooling a vital force in the process.

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Simple Correlations Between
Education and Individual Modernity
in 12 Nations

Researcher

	A	B	C	D	E	F	G	H	I
Argentina	-	-	-	.60	-	-	-	-	-
Brazil	-	-	.43	-	-	.57	-	-	-
Chile	-	-	-	.51	-	-	-	-	-
E. Pakistan	-	-	-	.41	-	-	-	-	-
Guatemala	-	-	-	-	-	-	.52	-	-
India	-	-	-	.71	-	-	-	-	-
Israel	-	-	-	.44	-	-	-	-	-
Mexico	-	-	-	-	-	.55	-	-	-
Nigeria	.50*	-	-	.52	-	-	-	-	-
Puerto Rico	-	.15	-	-	-	-	-	-	-
Tunisia	-	-	-	-	.53**	-	-	.26	-
U.S.A.	-	-	-	-	-	-	-	-	.41

*Mean from both Moslem and Christian schools
** Mean for both boys' and girls' scores

Mean correlation = .47

Study Code:

- A. Armer and Youtz. 1971. N=591. 17 year old schoolboys.
- B. Cunningham, Ineke. 1974. N=1,339. Grades 10,11,12. Male and Female.
- C. Holsinger, Donald. 1974. N=2,531. Grades 3,4,5. Male and Female.
- D. Inkeles & Smith. 1974. N=6,000. Adult Male Factory Workers, 18-32 years old.
- E. Klineberg, Stephen. 1974. N=526. Family groups with children aged 13-19.
- F. Kahl, Joseph. 1968. N=627 for Brazil; N=740 for Mexico. Adult Male Factory Workers, 25-49 years old.
- G. Portes, Alexandro. 1973. N=1,060. Adult Married Couples.
- H. Sack, Richard. 1974. N=1,106. Predominantly Male Workers ages 17-70; with mean age of 27.9 years.
- I. Suzman, Richard. 1974. N=502. Black Males and Females aged 25-45.