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INFORMATION PROCESSING: A CRITICAL REVIEW

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College of Commerce and Business Administration
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A Critical Review

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This paper is intended as a critical review of the usefulness of "cultural differences" in defining the nature of information processing activities individuals may use in their role as consumers. Of particular interest are those cognitive behaviors by which an individual collects, integrates and evaluates information relevant to a decision among competing alternatives. Is there any reason, based on existing empirical evidence, to believe that these judgmental activities will systematically differ across cultural groups? If so, in what ways might we expect them to differ, and under what conditions? Since "culture" and "information processing" are broad labels subject to varieties of interpretation, the limits of this review should be defined. The concept of "culture" is quite elusive; there is little consensus on how to operationally distinguish one culture from another. Consequently, no unique definition will be proposed to guide the review. Instead, the domain of research reviewed will encompass all work relevant to the topic of information processing defined by the researchers themselves as cross-cultural, or involving comparisons between groups distinguished by any of the demographic dimensions commonly associated with "culture" (or "subculture"). These may include nationality, geographic location, social class, race, etc. (Although this definitional problem will be momentarily sidestepped to expedite the review, its relevance to the basic question under examination cannot be so easily dismissed, and it will return to haunt us.)

Three major areas of research will be covered: (1) research relating cultural differences to problem solving strategies, including work on

the subjective treatment of time and on abstract reasoning; (2) research linking culture with personality traits which are also related to information processing differences (e.g., locus of control, risk-taking propensity); and (3) research dealing with the unique evaluative systems found in different cultures.

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Problem Solving Processes

Problem solving processes as defined here, encompass the chain of cognitive activities through which an individual marshalls evidence about the consequences of alternate courses of action, integrates the evidence, generates hypotheses about future events, and chooses some "optimal" strategy for attaining whatever configuration of outcomes seems ideal to him. A number of diverse streams of cross-cultural research have dealt with different portions of this process, although attempts to rigorously examine the decision strategies of individuals on a cross-cultural basis have been rare.

Subjective Time

Time and timing enter into an individuals's information processing activities in a variety of ways. In order to explore evidence of cultural differences in the subjective treatment of time, three conceptually distinct areas in which time enters into the decision process should be distinguished: (1) the amount of time between the point where an individual begins to analyze an impending decision problem and the point at which he anticipates having to make the final decision (his "planning horizon"); (2) the amount of time a person anticipates will separate the making of the choice and the reception of consequent penalties and rewards; and (3) the amount of time a person is willing to invest in actual information processing activity relative to a choice problem. Each of these three time-related variables has received some attention in cross-cultural research.

The findings have almost uniformly indicated that members of disadvantaged subcultures encounter difficulties when they try to conceptually handle temporal sequences of events which extend very far into the future. Thus members of culturally deprived social groups have been described by an inability to engage in future-oriented planning or to establish long term goals as a basis for their planning (Leshan, 1952; Gray and Klaus, 1965; Hertzog, 1971; Meade, 1968). Meade (1968) demonstrated that differences in time perspective could be found between students in the United States (longer horizons) and students in India (shorter horizons). Mehta, et al. (1972) could not, however, find evidence of such differences. Meade (1972) shed some light on the discrepancy by showing that differences in planning horizon are apparently confined to certain Indian sects; the planning horizons of the Kshatriya, Sikh, and Parsee sects appear comparable to those found in the United States. (Where to stop segmenting into defining more and more "subcultures" is a continuing problem throughout cross-cultural research.)

Closely related to the short planning horizons associated with culturally disadvantaged subcultures is an apparent inability to delay gratification (Mischel, 1966; Gray and Klaus, 1965; Cole, 1972). Members of the disadvantaged subculture apparently find it more difficult to decide a tradeoff between a larger delayed reward and a smaller immediate reward in favor of the former. There is little to indicate whether (a) the uncertainty caused by a person's inability to conceptually handle distant events induces the choice of the clear and immediate reward or (b) the motivation to enjoy the reward now (while he can) induces him to forego

The first part of the document is devoted to

the study of the general properties of the

operator T defined by the integral equation

(1.1) $u(x) = \int_a^b K(x, y) u(y) dy + f(x)$

where $K(x, y)$ is a continuous function on the

rectangle $R = [a, b] \times [a, b]$ and $f(x)$ is a

continuous function on the interval $[a, b]$.

It is shown that the operator T is compact

and self-adjoint. The eigenvalues of T are

real and the corresponding eigenfunctions

form an orthonormal basis for the space

$C[a, b]$. The eigenvalues of T tend to zero

as the order of the eigenfunction increases.

The eigenfunctions are given by the integral

equation (1.2) $T u(x) = \lambda u(x)$

where λ is an eigenvalue of T .

It is shown that the eigenfunctions of T are

orthogonal with respect to the inner product

$(u, v) = \int_a^b u(x) v(x) dx$.

The eigenvalues of T are given by the

equation (1.3) $\lambda \int_a^b K(x, x) dx = 1$

where λ is an eigenvalue of T .

The eigenfunctions are given by the

equation (1.4) $u(x) = \int_a^b K(x, y) u(y) dy$

the effort of long-term planning.

Several studies have also reported that subjects from lower class subcultures tended to be more impulsive in judgment tasks (i.e., to reach closure faster) than their middle class peers (Kagan, 1971; Hess and Shipman, 1965). Kagan (1971) marshalls evidence to suggest that this impulsiveness is accompanied by relatively less concern over the possibility of failing to make the correct choice.

The picture that emerges from the existing research seems to portray the disadvantaged consumer as tending to engage in very quick bursts of information processing activity only as the need to make the choice commitment becomes imminent. Long run reward-penalty dimensions of the problem are not particularly salient and these dimensions tend to drop out of the individual's evaluative equation.

Abstract Reasoning

Difficulty in generating hypotheses about future events may be related to a difficulty in thinking in abstract terms. Not surprisingly, research on cultural deficit has focused on differences in the concrete-abstract dimension. The abundance of research substantiating the concrete nature of the thought processes displayed by disadvantaged, unschooled, "primitive" subcultures lends high credibility to the existence of such a difference. For example, Piagetian research has found general support for the notion of stages of cognitive development differing in the abstractness of the reasoning concepts used. The rates of progression and ultimate attainment level have differed substantially across subcultures (Dasen,

The first part of the book is devoted to a general history of the United States from its discovery to the present time. It is divided into three volumes. The first volume contains the history of the discovery and settlement of the continent, and the establishment of the first colonies. The second volume contains the history of the colonies from their first settlement to the declaration of independence. The third volume contains the history of the United States from the declaration of independence to the present time.

APPENDIX

This appendix contains a list of the principal events in the history of the United States, and a list of the principal authors of the works mentioned in the text. It is divided into two parts. The first part contains a list of the principal events in the history of the United States, and the second part contains a list of the principal authors of the works mentioned in the text.

1972), Cryns (1962), Greenfield and Bruner (1966), and Deutsch (1967) all indicate that disadvantaged subcultures show less of a tendency to engage in abstract reasoning. As described by Bruner (1970), this involves an inability to go beyond the objects, people, or events immediately present in one's thinking or language usage. Concrete reasoning does not deal with hypothetical possibilities or hypothetical plans. One universal finding has been that cultures characterized by attendance at "Western" schools tend to promote the development of abstract problem solving skills by forcing students to learn to solve problems involving things which are not present at the time, (Bruner, Oliver and Greenfield, 1966; Goodnow, 1969; Price-Williams, Gordon, and Ramirez, 1969). Since projections into the future necessarily entail handling hypothetical events, limited time horizons in decision making should be a corollary to relatively concrete cognitive development.

Concreteness in problem solving among minority subcultures has several implications. For example, extrinsic rewards (rewards which are tangible or take the form of observable approval from others) have been shown to be more motivating than intrinsic rewards (rewards where satisfaction depends on internal imagination or abstraction) with lower-class children and vice-versa with middle class children (Havighurst, 1970; Zigler and Child, 1969). Levi-Strauss (1966) has emphasized that, while basic problem-solving activities (classifying, ordering, logical thinking) are probably common across cultures, the kinds of attributes used in forming classes differ markedly. "Primitive" individuals rely heavily on properties readily seen or sensually experienced in categorizing objects while advanced or "scientific"

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classification systems rely more on properties which are inferred. In solving problems, someone using such a "primitive" type system would be constrained by his own concrete experience (or that of his community) and unable to generalize or make inferences beyond that experience. Jensen (1969) has proposed that inherent differences in conceptual learning ability may exist along cultural lines; conceptual learning differs from associative learning in the greater amount of transformation of information required.

Indications of more specific differences in information processing orientations also exist. Several studies have found that cultures which promote rigid, parental control tend to produce adults with less differentiated cognitive systems (Witkin, 1967; Dawson, 1967). A person with a relatively undifferentiated cognitive organization doesn't make fine distinctions among objects or use very many independent dimensions in making judgments. Finally, Cole et al. (1971) report several studies indicating an apparent cultural difference in the ease with which disjunctive or conjunctive judgment rules are applied. (A disjunctive rule says, in effect, that an object belongs to such-and-such a class if it possesses either attribute A or attribute B; a conjunctive rule says that it must possess both attributes A and B simultaneously to qualify). Liberian tribesman seemed to have less difficulty handling disjunctive rules than American subjects who have repeatedly shown a preference for conjunctive rules.

Overview

This review seems to suggest that members of disadvantaged subcultures (or "primitive" cultures) may systematically differ from other consumers in

their collection, organization, and integration of information relevant to exchange relationships. Members of such subcultures may tend to project planning only over short periods, weigh immediate rewards/penalties very heavily, make impulsive choices, focus on concrete evaluative attributes, and make only gross discriminations among choice alternatives using a very limited number of dimensions. However, the implications of this review should be kept in proper perspective.

First, there are a number of consumer decisions which may be characterized as "impulse" decisions regardless of the cultural heritage of the individual making them. Thus, whatever differences we might expect to observe regarding amount of prior planning or duration of judgmental input should logically be restricted to certain types of decisions, i.e., those not uniformly treated impulsively. The realm of expected differences is thus bounded.

Second, it is far from clear that the portrait of the disadvantaged consumer drawn above is not in fact a fairly accurate description of what most consumers actually do in the majority of their decision episodes. Slovic and his colleagues (Slovic, 1972; Slovic and Lichtenstein, 1971) have marshalled intriguing evidence that humans in general tend to resort to all sorts of simplifying tactics in making judgments. To the extent that these simplifying strategies produce virtual equivalence between the limited decision analysis characteristic of disadvantaged subcultures and the analysis actually practiced (regardless of theoretical capacity) by others, cross-cultural differences disappear from the scene. For example, Slovic has proposed a general principle, based on a variety of research

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findings, which he labels ---"concreteness".

"Concreteness represents the general notion that a judge or decision maker tends to use only the information that is explicitly displayed in the stimulus object and will use it only in the form in which it is displayed. Information that has to be stored in memory, inferred from the explicit display or transformed tends to be discounted or ignored (Slovic, 1972, p. 14)".

Since Slovic's research on which this proposition is based, draws largely on the United States college population, it may well be that reliance on concrete, observable, non-hypothetical information is quite common, on a day-to-day decision making basis, across cultures. In addition, the simplifying tendencies which humans in general display should become even more pronounced when the decision environment is characterized by a heavy information load: time pressures, distractions, multiple alternatives, multiple cues per alternative. Consumers often must operate in noisy, information-packed environments under some time pressure. In such situations, cross-cultural differences on the dimensions cited should also tend to disappear. Even the most abstract, complex individual can be expected to react to such conditions by restricting his attention to fewer dimensions or by using fewer category distinctions (Wright, 1973).

A general rationale for the reluctance of most consumers to weight long-run outcome dimensions very heavily in judging alternatives has also appeared (Wright, 1972). This rationale is grounded in the disutility of long-run dimensions as clear discriminators. The apparently trivial

The first part of the book deals with the early years of the nation, from the time of the first settlers to the end of the Revolutionary War. It covers the period of the early colonial period, the struggle for independence, and the formation of the new government. The second part of the book deals with the period of the early republic, from the end of the Revolutionary War to the beginning of the Civil War. It covers the period of the early republic, the struggle for a stronger central government, and the expansion of the nation. The third part of the book deals with the period of the Civil War, from the beginning of the war to the end of the war. It covers the period of the Civil War, the struggle for freedom, and the reconstruction of the nation. The fourth part of the book deals with the period of the late republic, from the end of the Civil War to the beginning of the Progressive Era. It covers the period of the late republic, the struggle for reform, and the expansion of the nation. The fifth part of the book deals with the period of the Progressive Era, from the beginning of the Progressive Era to the end of the Progressive Era. It covers the period of the Progressive Era, the struggle for reform, and the expansion of the nation. The sixth part of the book deals with the period of the early 20th century, from the end of the Progressive Era to the beginning of the World War. It covers the period of the early 20th century, the struggle for reform, and the expansion of the nation. The seventh part of the book deals with the period of the World War, from the beginning of the World War to the end of the World War. It covers the period of the World War, the struggle for freedom, and the reconstruction of the nation. The eighth part of the book deals with the period of the late 20th century, from the end of the World War to the present. It covers the period of the late 20th century, the struggle for reform, and the expansion of the nation.

effect of long-run dimensions on eventual decisions is attributed to the person's inability to reduce uncertainty about the status of the alternatives on that dimension, rather than to lack of concern over possible long-run consequences. To the extent that such dimensions don't assist the individual in escaping his conflict dilemma, they will be discounted. Again, the urgent conditions of many decision environments would seem to promote the use of short-sighted criteria, regardless of culturally-based analytic capacities.

Thus, the conditions under which cross-cultural information handling differences may emerge are, in reality, probably quite limited. Only where the decision context encourages leisurely, extensive processing about significant (meaningful differences; high investment) product areas should we expect the differences suggested by the research reviewed to be operative. We must also keep in mind just what the distinctions "primitive-scientific" or "concrete-abstract" really mean when we interpret this body of cross-cultural research. For example, in several discussions, cultures are figuratively arrayed along some primitive-modern continuum. However, the naivety of our intuitive ideas about where existing cultures might lie along that theoretical continuum is highlighted by an illustration of primitive (concrete) classification and modern (abstract) classification supplied by Cole, et al. (1971): "fruits and vegetables are classified by the average shopper in ways quite different from those of the botanist (p. 8)." In other words, they intend the term primitive to apply to the "average shopper" --- who is our focal point.

Personality and Information Processing

Fatalism

In the context of this review, personality variables become relevant only if (a) individual differences on the trait have been shown, fortuitously, to coincide with cultural differences, and (b) if differences on the trait have also been shown to relate to information processing strategies. The characteristic way in which a person views himself vis-a-vis the external environment appears to be such a trait. This general disposition has been given a variety of labels, including the popular "alienation", "origin vs. pawn orientation" (deCharms, 1968), fatalism (Nielsen, 1972), and "internal versus external locus of control" (Rotter, 1966). Spawned by Rotter's development of the I-E scale to measure this trait, an impressive body of research using a variety of measuring instruments has been conducted over the last decade (Lefcourt, 1972).

One consistent finding has been the characteristic level of "fatalism" varies systematically across different subcultures. A highly fatalistic individual assumes that his freedom to control his own fate is severely limited. He expects that the rewards and penalties he receives are dictated by forces in the external environment rather than by his own decisions. Development of a highly fatalistic outlook appears to be a reasonable adaptation to a lifestyle in which the person's observations tell him repeatedly that his own decision-making bore no relationship to the outcomes achieved. It is not surprising therefore that disadvantaged subcultures have consistently been found to be significantly more fatalistic

The American Medical Association is a national organization of physicians and surgeons, organized for the purpose of promoting the science and art of medicine and surgery, and for the betterment of the human race. It was organized in 1850, and since that time it has grown steadily in membership and in the scope of its activities. It is now the largest and most influential organization of its kind in the world.

The Association is composed of members from all parts of the United States, and from many foreign countries. Its membership is made up of men of the highest professional attainments, and its influence is felt throughout the world. The Association is a non-sectarian organization, and its members are of all religions and of all nations.

The Association has a long and successful history. It has been the champion of the medical profession, and has fought many battles for the rights of its members. It has been successful in many of its efforts, and its influence has been felt throughout the world. The Association is a noble organization, and its members are proud to be associated with it.

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than others (e.g., Gruen and Ottinger, 1969; Hsieh, Shybut, and Lotsdorf, 1969; Lessing, 1969; Strickland, 1972; Zytkoskee, Strickland, and Watson, 1971).

A number of studies have also demonstrated that differences in fatalism relate to differences in the way information is collected and used in making judgments; the implication is of course that these information handling differences will apply to the cultural differences cited above. The individual who does not believe he can control the outcomes he achieves is apparently less attentive to information which might be relevant to future decisions (Seeman and Evans, 1962; Seeman, 1963; Davis and Phares, 1967; Lefcourt and Wine, 1969). His usage of information actually gathered is not as efficient (Phares, 1968). The time he invests in making a decision from assembled information is significantly shorter than his less fatalistic peer on problems where skill is involved (Rotter and Murray, 1965). When he does seek information relevant to a decision, the high fatalist prefers secondary information filtered through others to first hand experience, while the reverse seems true for the low fatalist (Julian and Katz, 1968; Pines, 1973). In fact, the research on fatalism concerning decision times and concern over failure dovetails nicely with cross-cultural research by Kagan (1971) and Hess and Shipman (1965) noted earlier.

Regarding information received from social sources, the high fatalist appears less resistive to subtle persuasion attempts (Crowne and Liverant, 1963; Strickland, 1962; Getter, 1962) and more inclined toward a source rather than a content orientation in analyzing new information. These

findings taken together with the relative inattentiveness of the high fatalist to new information are quite reminiscent of the accumulated research on self-confidence and persuasibility (McGuire, 1968; Bither and Wright, 1973). The link between these two streams of research and implications for cultural differences can profitably be pursued. A further interesting insight is suggested by Brehm's (1966) reactance hypothesis. Brehm proposed that when a person's perceived freedom is threatened (as by an attempt to persuade him in one direction), a dramatic counterreaction may occur. In such a case, the persuasive attempt may evoke a "boomerang" effect in which the recipient actually moves away from the course advocated in the message. But "boomerang" effects (in the reactance sense) would be quite unlikely within a group of people who don't perceive that they really have any meaningful freedom of choice to begin with (i.e., the high fatalists).

Nielsen (1972; 1973) has shown that certain types of message strategies are particularly effective in influencing the high fatalist: (a) information which spells out in detail exactly how an alternative can lead the individual to attaining specific benefits (rather than leaving him to infer the means-ends connection for himself) and information appealing to his own short run self-interest (rather than long-run or societal interests). Again, these findings dovetail with cross-cultural research. Several studies have reported that children from lower social classes are less adept at causal (means-ends) analysis than middle class children (Hertzog, 1971; Walker, Torrance, and Walker, 1971; Langgulung and Torrance, 1972).

Completing the information processing cycle, post-decisional handling

CHAPTER I. THE DISCOVERY OF AMERICA

IN 1492, CHRISTOPHER COLUMBUS, AN ITALIAN MARINER, WAS SPONSORED BY THE KING AND QUEEN OF SPAIN TO FIND A WESTERN ROUTE TO THE EAST INDIES.

HE SAILING WEST FROM SPAIN, HE ACCIDENTALLY DISCOVERED THE AMERICAN CONTINENT IN 1492.

THIS DISCOVERY OPENED UP NEW TRADE ROUTES AND LAID THE FOUNDATION FOR THE EUROPEAN COLONIZATION OF AMERICA.

COLUMBUS' VOYAGE WAS THE FIRST OF MANY EUROPEAN EXPLORATIONS OF THE NEW WORLD.

OTHER EUROPEAN COUNTRIES, SUCH AS ENGLAND, FRANCE, AND HOLLAND, ALSO SENT EXPLORERS TO AMERICA.

THESE EXPLORERS FOUND A WIDE VARIETY OF NATURAL RESOURCES AND CULTURES.

THEY ALSO ESTABLISHED TRADE RELATIONS WITH THE NATIVE AMERICAN PEOPLES.

THE DISCOVERY OF AMERICA HAD A PROFOUND IMPACT ON THE COURSE OF WORLD HISTORY.

IT OPENED UP NEW OPPORTUNITIES FOR TRADE AND COLONIZATION.

IT ALSO LED TO THE DEVELOPMENT OF NEW TECHNOLOGIES AND SCIENTIFIC KNOWLEDGE.

THE DISCOVERY OF AMERICA WAS A PIVOTAL MOMENT IN THE HISTORY OF HUMAN CIVILIZATION.

IT CHANGED THE WAY WE THINK ABOUT THE WORLD AND OUR PLACE IN IT.

THE DISCOVERY OF AMERICA WAS THE BEGINNING OF A NEW ERA IN HUMAN HISTORY.

IT WAS A TIME OF GREAT ADVENTURE AND DISCOVERY.

IT WAS A TIME WHEN THE WORLD WAS OPENING UP TO US.

IT WAS A TIME OF GREAT HOPE AND OPTIMISM.

IT WAS A TIME WHEN WE BELIEVED THAT THE FUTURE WAS BRIGHT.

IT WAS A TIME WHEN WE WERE READY TO TAKE ON THE WORLD.

IT WAS A TIME OF GREAT COURAGE AND DETERMINATION.

IT WAS A TIME WHEN WE WERE READY TO MAKE OUR MARK ON THE WORLD.

of information may also be related to a person's perception of how much control he has over his destiny (and, consequently, to his cultural background). The unique aspect of post-decisional information processing is of course the possibility that attempts to reduce dissonance will produce biases in the kinds of information attended to and cognitive reorganization of prior information. Several studies (e.g., Cooper, 1973) have demonstrated, however, that perception of personal responsibility may be a necessary condition for dissonance arousal. Since the high fatalist does not see himself as a causal agent, he should tend not to feel personally responsible for his choices. Consequently, the types of information handling activities we associate with dissonance reduction may be largely absent in certain subcultures.

Risk Taking

Several streams of research deal with the topic of risk-taking propensity on a cross-cultural basis. Risky-shift research has indirectly provided some evidence that cultural differences in risk taking may exist. One of the many hypotheses suggested to explain the shift toward extremity in objective risk-taking when social interaction occurs states that risk taking may be more or less valued in a group as an activity unto itself (Pruitt, 1971). Following up on this "risk is a value" hypothesis, Kogan and Wallach "choice dilemma" problems, used extensively in risky-shift research, have been administered in Nigeria (Carlson and Davis, 1971) and Germany (Loman, Schrader, and Tromsdorff, 1971). The individual decisions recorded by Nigerian subjects were significantly more conservative

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than the typical responses of American subjects, while the German sample was equally as risky as the Americans. Nigerian subjects also did not view their peers as more cautious than themselves, in contrast to findings with American subjects. These findings seem to indicate that risk-taking may be more or less valued in different cultures. However, as with all "choice dilemmas" research, attributions of subjects' riskiness deal with objective risk rather than perceived risk. Without subjective data about how the different groups of subjects interpreted the possible consequences and associated costs of the "choice dilemma" problems, conclusions about risk-taking can be misleading.

Research on achievement motivation is also relevant to cross-cultural risk taking propensities. McClelland (1961) drew on a diverse body of empirical work in arguing that achievement motivation is a personality construct which accounts for major differences between cultural groups. Risk taking in an entrepreneurial sense was viewed as a necessary requirement for technological development within a culture, and differences in development and in scores on a variety of nAch measuring instruments were viewed as substantiating the assertion of cross-cultural differences. The relationship of achievement motivation to willingness to take risks in skill-oriented problem solving has also been demonstrated (Atkinson, 1964), although the relationship is not necessarily a simple one. To the extent that this work is valid, the implication is that the risk analysis processes employed by cultural groups whose family and religious traditions induce indifference to achievement will differ systematically from those where achievement is viewed as highly important. Presumably, the difference

is not in the process itself (at least little evidence exists to suggest this) but either in the way nAch interacts with estimated probabilities of success and incentive values of success (see Atkinson, 1957), or in the relative importance attributed to these latter two factors by different groups.

Loose characterizations of different cultural groups as risky and conservative in their decision strategies should be avoided. First, the McClelland's cross cultural comparisons can be challenged on methodological grounds. Levine (1973), for example, expresses concern over lack of face validity and concurrent validity in the measuring instruments used. Second, existing research relies heavily on the perspective of the researcher to establish what is or is not risky behavior. Since different cultures may interpret situations differently or have different preferred modes for expressing riskiness, we must be cautious of equating avoidance of risk "as I see it" with avoidance of risk "as he sees it". Third, many of the results from studies on nAch and on locus of control seem to complement each other. However, nAch deals only with competitive situations; locus of control is not as restricted operationally (deCharms, 1968). Locus of control, moreover, is not really a very precise concept; surely the differences between a highly fatalistic individual who sees (a) a random universe, (b) a benevolent Diety, or (c) a diabolical Diety as controlling his destiny may be relevant to decision-making strategies. Thus the general pattern of similar results from research on these two pan-cultural personality traits probably does not allow us much confidence in our ability to make precise cultural predictions about decision-making processes.

Evaluative Criteria

Perceptual dimensions

What effect might cultural differences have on an individual's perceptual sensitivity to different dimensions of products? These aspects of the environment on which a person focuses attention in recognizing and classifying objects presumably bear close correspondence to the dimensions which remain salient as he evaluates those objects. Reviews by Triandis (1964) and Tajfel (1969) suggest there is only modest evidence that perceptual phenomena relate predictably to cultural contexts.

The unique physical environment occupied by groups defined as culturally distinct may affect their perceptual sensitivity in several ways. Tajfel (1969) suggests "functional salience" as a label for those cases where "the physical ecology of the environment, and the conditions of survival related to it, are responsible for some variability in the degree of close inspection that human groups undertake of various aspects of their physical surroundings (p. 379)." In other words, where an individual perceives the costs of misperception to be quite high (lethal) he becomes acutely alert, and the natural ecology surrounding him systematically biases the dangers to survival with which he must cope. Studies of visual illusion and binocular rivalry also provide some evidence that cultural differences in informational sensitivity can be attributed to differences in prior familiarity with human artifacts --- different shapes, objects, contours, etc. Finally, following Tajfel's taxonomy, language systems may bias the perceptual dimensions selected for attention.

In a slightly different vein, where modal norms clearly exist within a culture suggesting that certain outcomes are to be valued more than others, individuals may conform to these and be quite attentive to those outcome dimensions. The extent to which cultural norms will influence selective perception is undoubtedly influenced by the host of factors prominent in small group research: cohesiveness within the cultural unit, degree of privacy surrounding the judgmental task, ambiguity of the individual's own experiences, etc.

Affective-meaning systems

Work by Osgood and his associates indicates that the three major factors of semantic space (evaluation, potency, activity) are pan-cultural (Osgood, 1965; Tanaka, Oyama, and Osgood, 1963; Osgood, 1965; Tanaka and Osgood, 1965; Tanaka, 1967; Tanaka, 1972). Thus, the affective-meaning systems employed by people in diverse cultures are virtually equivalent at the most basic level. However, evaluative criteria may be culturally unique in the sense that the factor loadings of individual semantic scales may differ somewhat from culture to culture, even to the point that a dimension of meaning may load on one factor in one culture and a different factor in another culture (Tanaka, 1971). Additionally, and unsurprisingly, the directionality of the evaluations given concepts may differ substantially across cultures. For example, Tanaka (1972) reports that, in the domain of time-related concepts, there was high similarity of evaluative direction among high-school students from 15 different countries in the domain of time-related concepts; the Korean sample showed the only

substantive divergence. But variation across cultures was much more pronounced in the domain of racial evaluations, regional evaluations, or socioeconomic concept evaluations. And discovery of universality in the evaluation of such concepts as democracy, competition, or wealth does not mean, of course, that these concepts necessarily connote the same things in different cultures.

Szalay and Bryson (1973) measured three aspects of affective space on which cultural groups might be expected to differ: the similarity of meanings given to concepts, ordering of priorities regarding the concepts, and patterns of relatedness among the concepts. They found that the cognitive distance between their black and white American samples was slightly greater across problem domains than that between white student and white workers (American), while the Korean-American divergence was substantially greater.

The assumption that a common culture produces some degree of homogeneity in the value systems of group members is common among anthropologists and sociologists, and the hypothesis is so intuitively appealing it almost deserves to be true. Some troublesome questions do arise, however, when research on cross-cultural value systems is attempted: when cultures are differentiated on the basis of easily observable demographic variables, as is common, over how wide a range of concept domains does affective homogeneity really exist? how large is the variation within groups defined in this manner compared to variation between groups? is whatever homogeneity exists confined to very broad sorts of priorities with priorities regarding the realm of individually purchased goods and services quite heterogeneous? and finally, what

research problems arise in trying to construct profiles of culturally distinct evaluative systems? What little evidence we have so far does not permit any generalizations about cultural differences in the content of long-term memory, nor any conclusions about whether such generalizations can ever emerge.

Considerable research effort has already been expended in trying to use convenient demographic distinctions in identifying segments of individuals with common perceptual schemes and priorities in the domain of products and services. These analyses have been quite discouraging. Clusterings based on similarity of evaluative space usually cut across demographic or cultural lines or subdivide within "cultures". This body of research seems to argue that such clusterings can and should be discovered without prior reference to demographic differences.

The work reviewed regarding cultural differences in decision processes, abstract means-ends analysis, differentiation, etc. seems to be fairly well rooted in inductive theoretical analysis. It is in this area of the content of evaluative systems that cross-cultural research seems to become virtually theoretical. Why do we suspect that those groups we point to as "cultures" will show homogeneity in the content aspects of judgment? Because they seem to have shared a more-or-less similar life experience. What is it about their life experience which makes us think we should discover similarities? In most cases, this stage in the theoretical reasoning is sidestepped. How little similarity do we tolerate before we give up on labeling a grouping as a "culture"? Should we conclude that any grouping of individuals which yields substantive

similarities in category content and priority systems indicates that the group qualifies as a "subculture"? Is a lot of demographic similarity and a little cognitive content similarity more meaningful than vice-versa? Or does the notion of culture still make sense, given the speed with which sociological and technological change moves to reduce yesterday's "obvious" cultural differences and to redistribute individuals among different "subcultures"?

In part the problem is one of description. Many analytic approaches have been employed in trying to catalogue cultural value profiles. In part the problem is one of purpose. That is, we can go on describing differences in the perceptual and evaluative content of "cultural" groups defined in various ways ad infinitum. If our goal is the creation of goods and services bundles ideally tailored to the desires of these groups, then the descriptive catalogue may be seen as a sufficient end unto itself. But there must be some attempt to tie these descriptions back to shared heritage and experience if the concept of "culture" is to have theoretical importance.

The descriptive problem itself is troublesome. At one extreme we find the traditional approach in which the researcher accepts the demographic distinction as his starting point and relies heavily on his own intuitive insight to characterize the perceptual/affective space of a "culture". In many cases the researcher has himself been a member of the culture he is trying to define; in most cases he is at least biased by his a priori acceptance of the demographically based boundary line. Two examples of intuitive value profiles found in the consumer research

literature may serve to illustrate the problems of such analyses. Among the eight values that Engel, Kollat, and Blackwell (1968) suggest as characterizing American culture are religiousity, conformity, security, and leisure. How likely is it that an alternate interpretation of America's brief history and of the divergent experiences of the last several decades would produce a profile containing opposite values? And if religiousity implies allegiance to the Puritan ethic, isn't there a problem of internal consistency if leisure is also to be a dominant value? Dubois (1972) suggests that the French culture may be described as valuing both individuality and nationalism, as valuing individual freedom and being highly fatalistic, as valuing both logical thinking and artistic sensualism. Either internal consistency is again a problem or the diversity within France is so great that talking of a unified French culture loses meaning. (In all fairness, dictating this profile was not Dubois' major objective.)

Cross cultural researchers frequently attempt an "ethnographic" analysis to discover the real category-content systems existing within a group (Frake, 1962). Such analysis is basically qualitative and entails close observation of everyday life-style and discussion with group members. Hage (1972) presents an illustration of the approach relevant to consumer analysis. He was attempting to characterize the content of the category systems used by Munich, Germany natives in the domain of beer-drinking. What emerges is akin to the market grid types of analyses often presented in basic marketing management courses to illustrate in a folksy way how a segmentation hypothesis might

logically be created. Ethnographic analysis thus seems relevant as a first step in research on affective-meaning systems, a step which should precede, or at least accompany, analysis of measured responses via powerful scaling or clustering statistical routines. Triandis and his associates (Triandis and Malpass, 1970; Triandis, Vassilou, Tanaka, and Shanmugam, 1972) suggest an imaginative potpourri of methods for making observations of overt behaviors and eliciting subjective verbal responses as fodder in the development of cultural category profiles. This work also demonstrates how such an initially qualitative approach can eventually culminate in rigorous statistical analysis. If multivariate scaling and clustering routines are to be applied in cross-cultural research, the necessity of prior ethnographic analysis seems extremely crucial in order that outputs can be interpreted. A good example of this, in addition to the work cited above, is a study of Liberian culture in which an exhaustive attempt to identify the kinds of everyday activities and contexts people were familiar with preceded application of hierarchical clustering of free-response data to compare category sortings (Cole, Gay, Glick and Sharp, 1971).

Overview

Differences in the final decisions consumers make may be traced either to differences in the judgmental strategies brought to bear on the task or to the evaluative content of criteria which they applied. Thus individuals with identical perceptions and priorities may reach different decisions because their respective paths of analysis differed,

or individuals using identical processes may reach different conclusions because of differences in valuation systems. To what extent does this review indicate that cultural similarity leads to homogeneity in either judgmental process or in affective criteria?

There seems little reason to suspect that the basic sorts of information processing activities contributing to consumer decision analysis will differ across cultures. There is, however, considerable evidence that cultural differences in the execution of these basic processes may exist. In particular, cultures we describe as disadvantaged appear to promote less abstraction, greater concern over short-run outcomes, impulsivity, lower inclination toward spontaneous means-ends analysis, less active information search, and less differentiation in classifying things. Newell and Simon (1972) assert that culture plays a role in information processing only through its influence on the content of long term memory. This position seems to be partially belied by some of the evidence reviewed. On the other hand, Newell and Simon interpret their work on problem solving and inference processes (which has not rigorously explored cultural or even individual differences) as showing the dominance of the task environment in shaping the decision strategy applied. One major question which may be raised is whether the differences in judgmental strategy which research shows could exist will actually manifest themselves over a large portion of everyday consumer decision tasks. The task environment may quite often overwhelm cultural differences.

Cross cultural research on information processing skills has been criticized on several grounds including the researcher's relative ignorance of language, and the different motivations of different subcultures regarding participation in research tasks. Perhaps the most damaging criticism, however, refers to failure to give sufficient attention to the influence of the situational context. Cole and Bruner (1971) remind us that formal equivalence of experimental operations cannot be assumed to insure actual equivalence of the task environment from the perspectives of different subcultural groups, and that we have little knowledge of how representative different task environments are within the experience of different groups. (Ignorance of the situational context of consumer decision making and the effect of task factors on this process is not confined to cross-cultural research.) Although some of the work comparing the retail structures serving middle class and ghetto residents is suggestive (e.g., Alexis, 1972; Sturdivant, 1973), more rigorous analysis of the structure of the decision environment facing different cultures should prove quite useful.

The question of the status (and future) of the hypothesis that membership in a culture produces relative homogeneity in the content of individual value systems is difficult to answer right now. We arrive back at what is, in the author's view, the core problem of cross cultural research: how do we operationally define a culture? Traditionally, cross-cultural research proceeds by defining distinct "cultural" groups using such dimensions as physical proximity, language similarity, and/or some combination of demographic characteristics. Once defined, differences in affective systems or perceptual systems may be sought.

Thus we define two segments of people who show within-group homogeneity in category content and in their priorities within a conceptual domain as culturally distinct only if these two groups also fall neatly into place along easily observable demographic lines. However, it seems the concept of "cultures" loses all meaning unless these differences in evaluative space actually do exist. That is, there is really no such thing as a "culture" unless the grouping in question does indeed have a degree of commonality in evaluative viewpoint.

Does our operational definition stress demographic similarity and use that as a starting point for seeking evaluative similarity? Or do we recognize evaluative similarity as the necessary ingredient? If so, should we search initially for evaluative similarities and then try to trace backwards in search of some dimensions of common experience? Where do we stop segmenting into subcultures?

In summary, a reasonable conclusion may be that cross-cultural comparisons related to the judgmental process of consumers have a future, especially if the representativeness and the interpretation of the judgmental task environment are systematically considered. On a more pessimistic note, the future of cross cultural comparisons related to the content of evaluative criteria used by consumers is ambiguous. Granted that differences in choice patterns cannot be fully understood without awareness of the underlying value systems of the decision makers, it is nevertheless unclear how descriptions of these value systems on a cultural level will ever be woven into explanatory consumer theory.

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