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ABSTRACT

In this theoretical working paper, an attempt is made to pull together the two areas of cognitive information processing and emotional arousal, in order to provide a fuller framework for examining media effects. The development of a cognitive-behavioral index is proposed as a research tool resulting from this merger of areas, as are a number of hypotheses about media use and effects for different levels of the cognitive-behavioral index. (JY)

MICHIGAN STATE UNIVERSITY

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Violence in the Media

PREDICTING MASS MEDIA EFFECTS: A COGNITIVE APPROACH

by

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4. "Girls' Attitudes Toward Violence as Related to TV Exposure, Family Attitudes, and Social Class," Joseph R. Dominick and Bradley S. Greenberg. February, 1971.

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Questions concerning mass media effects can be approached from basically two positions. The first, a societal level, considers the influence the media have on the functions and processes of a given society. This includes the study of diffusion, modernization, and media as institutions of society. The second approach considers the effect of a given medium on the individual. The two approaches are not entirely independent since an influence on the individual, over time, would be reflected in society. However, the distinction is considered useful in the present conception of mass media effects.

The present paper will deal with the question of mass media effects on the individual. The effect focused upon will be limited to emotional arousal and the influence of arousal on subsequent behavior. The medium most referred to will be television; other modes of communication will be considered briefly in the concluding section of the paper.

In general, an attempt will be made to pull together two areas of theoretic relevance to the affects question posed. The first area is that of cognitive information processing, its relevance being that it begins to define the way an individual mentally processes media information. The second area, emotional arousal, is considered relevant as a media effect due to its influence on overt behavior. These two areas will be considered in light of the ways particular types of content are processed by particular cognitive types resulting in a specifiable arousal state which, in turn, leads to probable behaviors. From these considerations an approach to the study of media arousal effects will be proposed and suggestions for future research considered.

THE MEDIA EFFECTS QUESTION

Weiss (1969) notes that no satisfactory or theoretically derived schema has been developed for categorizing media effects. This points out the diverse nature of the effects question. To speak of media effect, the particular effect must be specified and the conditions under which it is expected to be evident detailed.

The present approach will limit the effects area to the degree of emotional arousal elicited by a given type of media content under particular conditions and will relate this arousal to subsequent behavior. The underlying assumption here is that the more arousal elicited, the more likely it is that the individual has been affected by the experience. If a child is watching a violent segment on television, it is expected that the more aroused he is by the scene, the more probable it is that he will react as the situation dictates. For example, if the situation is facilitative, he will be more aggressive in a post-viewing situation than a child who is less aroused. If the situation is inhibitive, he will be less aggressive than the child who is less aroused. It would also be expected that if the child is more aroused, he will remember the experience longer, a proposition which has implications when considering the long and short term effects of the media.

The basic problem to be overcome is that of individual differences in emotional arousal. As DeFleur (1966) notes, this problem can be overcome through the "Social Categories Theory" of mass media effect. This "theory" posits that individuals who have a number of similar characteristics will have similar "mass communication folkways and thoughtways". Thus, individuals can be grouped by these characteristics and people in the same category are expected to respond to a particular type of content in roughly the same way. DeFleur (1966) also points

out that the social categories approach usually results in a descriptive rather than an explanatory "theory". The approach of the present paper is to utilize cognitive processes, i.e. cognitive structure, as the means for classifying individuals. Since the processing approach brings with it a strong explanatory base, the social categories view gains added strength.

Traditionally, cognition and emotion have been considered as separable entities. However, Gordon (1969) and Davitz (1969), among others, have pointed out that there is no valid evidence for viewing the two as separate. They note that cognitive functions are integrally linked to emotional experience and, in turn, emotional arousal can be stimulated by purely cognitive activity. Throughout the present writing, these elements will be viewed as highly interdependent.

The present approach to cognitive information processing will be presented in four parts: (1) Perception and thought processes in general, (2) cognitive structure considered in depth, (3) a behavioral typology relevant to cognitive processing, and (4) cognition and affect. The concluding segment will consider implications of the approach and will present suggestions for needed research.

PERCEPTION AND THOUGHT

The thinking process has been studied from various theoretic approaches. Early attempts concentrated on particular cognitive variables or on the logical connectives between variables (Dienes and Jeeves, 1965). It was soon realized that the difficulty with studying component parts of the system is that the whole is seldom equivalent to the sum of its parts.

More recent attempts have focused on "structure" which is, basically, the way in which the parts make up the whole. This approach has examined the problem of

how humans evolve mechanisms or schema by which they evaluate the stimuli in their environment, making "sense" of these stimuli in such a way as to enable them to predict events with a high degree of probability (Dienes and Jeeves, 1965). These evaluating or predicting mechanisms have been referred to as structures. Vernon (1962) and Haber (1969) state that there is essentially no difference between thinking and perceiving. Both processes involve the same activity. As we grow up, we begin to develop sets of ideas as to how things should fit together, or what events make sense. Bartlett (1958) also characterizes perception and thinking in terms of giving significance, relevance, or meaning to our behavior, knowledge, and desires.

Patterson and Beach (1967) reviewed the experimental literature on human judgments of the statistical properties of various sorts of stimulus distributions. The results indicate that to a very substantial extent, the human information processor carries out strategies functionally equivalent to those embedded in standard statistical measures. In other words, man attempts to calculate the probabilities of occurrence of events and formulates strategies accordingly. Assuming that this is the case, and that there is very little difference between cognition and perception, we are led back to the proposition that predicted probabilities or "expectations" help to structure our perceptions. These points lead us to a more in depth consideration of how man functions in his environment. Here, Kelly (1955) has provided a theory which is consistent with the above points. Kelly's "theory of personal constructs" is a general approach to human cognitive functioning. The theory is a formulation which refines the information processing model and is presented here as a basic framework from which to approach cognitive structure.

Kelly's basic approach is to view man as functioning much the same as does a scientist. Thus, man-the-scientist attempts to observe, form hypotheses, test these hypotheses, relate the outcomes to predictions or expectations and re-evaluate the situation. This, of course, being done subtly and in most cases the individual is not totally aware of the ongoing process. The theory posits the following basic assumptions:

1. That man and all living creatures are, by definition, active. The position that man is essentially inert until motivated is rejected. Thus, the issue of what prods an inert organism into action is irrelevant.

2. As man considers his position at particular choice points, he will move in the direction of increased meaning in his own individual terms. Thus, man's perceptions are construed in such a way as to make them meaningful.

3. The cognitive structure of a particular individual will be relatively unique, however, understanding the structure itself will allow meaningful comparisons between individuals.

By focusing on anticipation or prediction of events, Kelly's theory emphasizes the notion that man seeks to predict the events he is about to experience. The way an event is anticipated is defined by the person's personal constructs or thinking structures. Constructs are basically patterns for viewing or construing the world. Thus, a construct is a tool to allow not only discrimination and organization of events but also the anticipation of future possibilities. Constructs do not exist in isolation; they are linked to each other in a coherent and orderly manner. Single constructs are personal affairs, and the way constructs are interrelated with each other differs among individuals. Although, again, the social categories approach allows the categorization of similar cognitive types.

As Bannister and Mair (1968) point out, the construct system represents a network of pathways along which an individual is free to move. Each path is like a two-way street and the individual can move in either direction but he cannot strike out across country without building new constructs or routes. Just as the scientist cannotforesee possibilities which he has not conceptualized in terms of hypotheses, so the individual can only prove or disprove that which his construct system allows him to see in terms of possible alternatives. "The construct system sets the limits beyond which it is impossible for a person to perceive, and in this way constructs are seen as controls on a person's outlook and also, in an ultimate sense, as controls on his behavior" (Bannister and Mair, 1968).

Construct theory brings with it a methodology developed concurrently with the theory. The methodology will be discussed only briefly here. The basic methodology is a process of comparisons made by the subject. The comparisons may be of people who are important in the subject's life or of particular topic areas. In either case, the constructs, i.e., dimensions along which the subject thinks about the topic, are elicited from him rather than presented to him as preselected scales upon which to respond. In the case of the mass media, the various media or individual elements such as TV programs could be used as the comparative units.

As a detailed example, suppose we wished to examine the content and structure of a subject's cognitions relating to entertainment programming. The approach to this problem would vary depending on the interests of the study. We may wish to examine particular types of shows such as action-adventure, comedy, or news-documentary. Assume, for now, we are interested in the dimensions related to the

subject's favorite TV programs. We might proceed by first determining his three favorite and three least favorite TV shows. The interviewer would then work with pairs or groups of these elicited programs in various combinations. For example, using three shows, the subject would be asked to suggest important ways in which two of these are alike and thereby different from the third. Various combinations would be tried in order to elicit the dimensions along which the subject compares the programs. These dimensions should then reflect the important dimensions along which the subject decides which shows he favors and which he dislikes.

Stevenson's (1968) "Play Theory of Mass Media" is based on a simplified version of this process in which the comparison procedure used is the standard Q-Sort method. However, the Q-Sort method does not allow for the examination of the personal meaning of the various elements sorted by the subject. This failing might be overcome, in part, by extensive pretesting on the target population in order to refine the elements presented to the subjects for sorting.

To analyze our data on favorite programs, a number of "grid"or matrix methods are available. The elicited dimensions could be placed in a "grid" with the programs on one axis and the elicited dimensions on the other. This would allow the examiner to determine not only the content of the subject's thinking, but also the structure (Bannister and Mair, 1968). The structure, through the "grid" method, would reveal the complexity of the interrelationships among dimensions and their hierarchical nature. This complexity factor will be dealt with in greater detail in the following section.

COGNITIVE STRUCTURE

In general, cognitive processes have been viewed as an integral and dynamic

part of the perceptual process. We have noted that the needs and values of the individual, in essence, his personality, interact with the environment to reduce uncertainty, i.e., give meaning to his surroundings. As stated by Haber (1969), "Perception and thought must be considered as a continuum of cognitive activity." These processes are mutually interdependent and can only be separated by arbitrary rules of expedience. Perceptual here refers to those processes concerned with the translation of stimulus energy into experience, response, or memory.

Assumptions of the processing approach are:

1. A perceptual response is the result of processing information through a number of stages each of which takes time to organize or traverse.

2. Processing is limited by the capacities of the information-handling channels, the information content of the stimulus, and the prior experiences and condition of the perceiver.

3. Perceptual processes cannot be studied or analyzed independent of memorial ones.

Number three above assumes that perceivers can remember, at least in part some of what they have seen. Thus, not only is there a percept of stimulation while the stimulus lasts, but also a memory of that stimulation and percept which persists for some specific length of time. The memorial function becomes more relevant when considering long vs. short term effects of the media.

As Schroder, Driver, and Streufert (1967) note, information processing, as it relates to structure, is viewed as the nature and interdependence of conceptual rules available for organization along various dimensions. The problems lie with determining the number of dimensions processed in a given environment and determining the degrees of freedom involved in the rules of combination. Traditionally, structure has been viewed in terms of complexity or simplicity of the structure.

In construct theory, similar approaches have been followed. For example, Jones (1961) and Bieri (1955), among others, have used estimates of variance accounted for in factor analytic studies as measures of cognitive complexity or simplicity. Bonariue (1965) and Crockett (1965) discuss similar approaches to the structural model. Bannister (1960, 1962) explored the intensity of construct relationships as a structural phenomenon. He posited that a high intensity score might indicate a high degree of organization in the construct system under examination. Similarly, Warren (1966) used intensity of relationships as an overall measure of the amount of construct linkage within any grid. Here, low intensity of construct relationship would indicate a less complex conceptual structure. Mair (1967) used a similar index of intensity, specifying the intensity of the network linking to specific constructs.

For the present conception, the approach of Schroder, Driver and Streufert (1967) to cognitive structure will be followed. They suggest that cognitive complexity or structure can be categorized or indexed as (1) low integration index, (2) moderately low integration index, (3) moderately high integration index, and (4) high integration index. The lower levels of integration are characterized as hierarchical sets of established rules and procedures. Higher levels possess the ability to generate new rules or schema for categorization.

Basically, structure is defined by (1) Differentiation: The degree of diversity of the system, i.e., the number of schema and dimensions and the complexity of their organization; (2) Discrimination: The degree of discrimination between stimuli and within dimensions; and (3) Integrative Complexity: The potential for generating new patterns or schema without the imposition of new external conditions. These will be discussed briefly and a measure of structure

suggested as the most appropriate measure to be used in conjunction with the arousal formulation to be presented later.

Differentiation. This refers to "the number of dimensional units of information generated by a person when he 'perceives' an array of stimuli." Dimension, here, refers to a unique arrangement of stimuli. For example, a person asked to sort objects into categories may use only one dimension to complete the task. Since this is a possibility, sorting is only partially satisfactory as a measure of differentiation; we should have evidence that each dimension has some degree of functional uniqueness. Differentiation is somewhat peripheral in the measurement of complexity because it is not a key aspect of integrative complexity. Yet, the more discriminations a person can make, the greater the potential for integrative complexity.

Discrimination. This is the capacity of the structure to distinguish among stimuli. The more complex the structure, the more ways in which a stimulus can be perceived. Discrimination can be measured by (1) stimulus range, (2) fineness of discrimination (scale level, e.g., nominal vs. ordinal), (3) capacity to delay stimulus assignment to particular categories and (4) scale flexibility.

Integration. The most relevant aspect of the complexity or abstractness of a cognitive structure is the extent to which information can be interrelated in different ways to generate new perspectives about a stimulus. To examine integrative complexity, it is necessary to focus on specification of a complex multidimensional cognitive schema and to identify the parts that are being governed as well as the way these parts are organized.

Complexity or abstractness of structure as measured by paragraph completion tests has shown a significant negative correlation with authoritarianism and

dogmatism and a positive correlation with intelligence and verbal fluency. In general, however, both high and low levels of integrative complexity can be equally intelligent if intelligence is measured by the amount of information known or by the degree to which learned rules can be applied under specified conditions. However, if intelligence is measured by ability to generate new rules, a marked difference would be evident.

In the arousal schema to be proposed, complexity of structure will be the primary attribute adopted to operationalize cognitive structure. The most sophisticated measure developed to date is the "multidimensional scaling" (MDS) technique. This is a form of psychological measurement which uncovers the number, kind, and organization of dimensions used by a subject in his perceptions and evaluations of a complex stimulus attribute. The MDS procedure has the subject judge relevant stimuli as to similarity of complex attributes. The analysis, then, determines those underlying dimensions of the attribute needed to reproduce the subject's original similarity judgments. Torgerson (1958) has presented the basic routine whereby, through matrix operations and factor analysis, similarity judgments are converted into dimensions.

In general, this method generates (1) the number of dimensions needed to reproduce the original similarity judgments with minimal error, (2) orders the stimuli on each dimension so that the identity of the dimension can be determined, and (3) indicates the weight or importance of each dimension in the process of reproducing the original similarity judgments.

It should be noted here that the complexity of an individual's structure will vary with the particular material being processed. The evidence indicates that a person can be highly complex in one area yet concrete in another. For example,

a chemist may be complex in the area of his speciality yet concrete in an unrelated area of study. The question remains unanswered as to whether general structural differences exist for individuals over a broad range of inputs. If general structural differences do exist, one could expect that behavioral differences should be evident in the different structures. Research in developmental psychology has revealed "behavioral" evidence which may support this contention. This evidence will be presented in the following section as a typology.

A BEHAVIORAL TYPOLOGY

The empirical data to be presented indicate that concepts other than hypothetical personality traits may have noteable predictive power. For example, Kagan and Moss (1962) have conducted a longitudinal study of behavior from birth to adulthood. They suggest that activity-passivity appears to be relatively consistent over time and predictably influences behavior in many situations. Yet, most experiments attempt to partial out or control for the effects of activity in order to investigate particular behaviors.

Gewirtz (1956) used a situation where a child painted in the presence of an adult. When he factor analyzed nine observational measures of child-initiated activity, two factors emerged. The first involved active direct verbal attempts to gain and maintain the adult's attention. The second consisted of the more passive indirect techniques of attention seeking. It is suggested here that dimensions such as these cut through many behaviors, communicative and other, and these dimensions could serve as powerful predictors of behavior.

An ongoing longitudinal study of children from birth to the present time is worthy of detailed examination. This study by Thomas, Chess, and Birch (1970)

has a great deal to contribute to individual differences as we are considering them. The current results of the study suggest categories which will be adopted in the model of media effects to be proposed.

Thomas, Chess and Birch note that it has been a general observation that children have a characteristic temperament or response pattern from the time of birth. Recent research efforts, however, have shifted to the individuality of the human personality and the influence of the environment in molding this personality.

The approach of these researchers has been to reject both the innate personality concept and the environmental influence approach as being by themselves too simplistic. Instead, they foster the view that "personality is shaped by the constant interplay of temperament and environment".

Their study was designed to determine whether or not the behavioral reactions of infants persist through childhood. At the same time, they focused on how a child's behavioral traits interact with specific elements in the environment. The data were collected by rating the behavioral profile of the child on a three-point scale of high, medium or low. Data were collected on the following dimensions:

1. Level and extent of motor activity.
2. Rhythmicity or degree of regularity of functions such as eating, elimination, and the cycle of sleeping and wakefulness.
3. Response to a new object or person in terms of accepting the new experience or withdrawing from it.
4. Adaptability of behavior to change in the environment.
5. Threshold or sensitivity to stimuli.
6. Intensity or energy level of responses.
7. The child's general mood or disposition, whether cheerful or given to crying, pleasant or cranky, friendly or unfriendly.
8. Degree of the child's distractability from ongoing tasks.
9. Span of the child's attention and his persistence in an activity.

This set of ratings defined the child's temperament or behavioral profile. The instrument was successfully tested in diverse populations including premature and mentally retarded as well as normal children. The sample in the longitudinal study was comprised of 141 children in 85 different families. For simplicity, the study was limited to middle-class families. The study is now in its 14th year.

The data have been collected by periodic observations, interviews with the parents, and interviews with the children's teachers. The primary source of information was the interviews with parents since they spent the most time with the child. The resulting evidence suggested that children do show distinct behavioral individuality in the first weeks of life, independently of their parents' handling or personality style. The long term evidence supports the conclusion that these behavioral characteristics persist in most children over the years.

The child's temperament is not unchangeable. In the course of development, environmental factors may modify his behavior. Some children in the study have shown changes along particular traits. These changes are currently being analyzed to determine whether the change was due to life situations or to specific stresses. It may be that inconsistency in traits is itself a trait in some children.

When the behavioral profiles were analyzed to determine correlations among the nine attributes, it was found that certain characteristics clustered together, and these clusters defined three general types of temperament although some children did not fit into any category. The types are:

"Easy" - Characterized by positiveness of mood, regularity of body functions, a low or moderate intensity of reaction, adaptability and a positive approach to rather than withdrawal from, new situations. These children establish regular sleeping and feeding schedules, are generally cheerful and adapt quickly to new routines, new foods, and new people. They learn the rules of games quickly, participate readily in new activities, and adapt easily in school. Approximately 40 percent of the total sample could be placed in this category.

"Slow to warm up" - These children typically have a low activity level, tend to withdraw on their first exposure to new stimuli, are slow to adapt, are somewhat negative in mood and respond to situations with a low intensity of reaction. They made up 15 percent of the sample.

"Difficult children" - These children are irregular in bodily functions, are usually intense in their reactions, tend to withdraw in the face of new stimuli, are slow to adapt to changes in the environment and are generally negative in mood. As infants they are often irregular in feeding and sleeping, are slow to accept new foods, take a long time to adapt to new routines and cry a great deal. Their crying and laughter are characteristically loud. Frustration usually sends them into a violent tantrum. They comprised 10 percent of the sample.

Overall, 65 percent of the children could be described as belonging to one of the three categories. The rest of the sample possessed mixtures of these traits.

These categories provide a valid categorization for researching the effects question. Although this typology has not been correlated with cognitive structure, it is suggested here that the two would correlate significantly thus providing evidence of a general cognitive characteristic which influences the way any information is processed. By combining this general structural complexity and particular content bound complexity into one index, a broader predictive base is established. This resulting Cognitive-Behavioral Index (CBI) will be utilized in the current arousal approach to mass media effects. The next section considers the relationship between cognition and affect or arousal. In this section, the overall predictive scheme will be presented.

COGNITION AND AFFECT

Several psychologists, e.g., Harvey (1963) social psychology; Hebb (1955)

neurophysiology; Bevan (1963) psychophysics; McClellan (1953) personality theory; and Berlyne (1960) general behavior theory have posited that the affective and behavioral consequence of an input is a function of its proximity to or distance from some intraorganismic norm or referent, often referred to as an adaptation level. The norm or referent to receive the most attention is the construct labeled expectancy. This is defined as, "the subjective probability of the occurrence or recurrence of a given consequence or outcome under given conditions" (Harvey, 1965).

This conception of adaptation level is consistent with the position taken in the present paper on three counts. First, from Kelly's theory, one of the basic assumptions was that man is, by definition, active. The adaptation level, then, could be viewed as a preset level of action. Second, from the typology provided by Thomas, Chess, and Birch, the adaptation level can be typed as the behavioral profile. Third, expectancy as it has been defined, can be placed in the context of Kelly's hypothesis that man attempts to anticipate upcoming events and predict their outcome.

Conceiving of the adaptation level notion as cognitive structure and behavioral profile combined, it would be expected that the same stimulus being processed by varying structural types would produce varying affect or emotional arousal. Data supplied by Harvey, Hunt, and Schroder (1961) provide support for this proposition. Here, individuals were classified as to their cognitive structure (abstract - concrete). The subjects were then run through a disorientation treatment consisting of leading them, blindfolded and with ear plugs, to experimental rooms over long circuitous routes. They were then given a placebo drug and other treatments aimed at generating apprehension and confusion. In addition to respond-

ing as expected on performance tasks, the more abstract subjects, as indicated on an affective arousal questionnaire, were less disoriented, less nervous, and less negatively aroused by the treatment than were the more concrete individuals.

In relation to aggressive behavior, although no evidence exists for this proposition, it would be expected that concrete, i.e., low cognitive complexity, individuals would exhaust alternatives more rapidly in a frustrating situation and would thus be more likely to resort to aggressive behavior.

Both of the preceding examples deal primarily with the level of emotional reaction. Overall, the present conception would view the individual of low cognitive structure as being more reactive to emotive stimuli. However, his range of emotional reaction will be more restricted than that of a cognitive complex individual. Davitz (1969) and Jacobsen (1969) note that there is a positive relationship between intelligence and range of emotional sensitivity. Thus, the individual of complex structure would have more ways to categorize and manipulate a particular input and could experience a wider range of feelings but would be stimulated to a lesser degree by the same media input. Consequently, the behaviors of these two individuals should vary accordingly. Assuming equal inhibitions, if a behavioral reaction is elicited, the more aroused concrete individual should react more energetically. The arousal formulation can be summed up as follows:

> The behavioral profile of the child, i.e., "easy, slow to warm up, or difficult", and his cognitive structure, i.e., "complex, moderate, or concrete", will influence his emotional arousal for a given media presentation. As the child's behavioral profile tends toward "difficult"

and his structure toward "concrete", his arousal states, along the emotional dimensions present, will increase. Given an increased arousal state, it is expected that any overt behavior performed will be more intense.

The prime implication of the above conception and the motivating reason for pursuing the cognitive-behavioral approach is the promise it holds for parsimoniously explaining affective variation. Ideally, individuals could be categorized by cognitive structure and behavioral profile as one index. It is believed that this index would account for a large portion of the variation in media induced affective arousal. At the same time, it would provide an explanatory base for behavioral differences.

SUGGESTIONS FOR FUTURE RESEARCH

The first area of needed research would be to develop an easy to use instrument for obtaining the behavioral profile of the individual. Ideally, information for classifying the individual would be collected from both the child and his parents. For example, the nine measures used by Thomas, Chess, and Birch could be utilized in a self report questionnaire. The same data on the child would be collected from the parents and the two questionnaires compared. Once a reliable and valid instrument was available, correlations between cognitive type and behavioral type should be examined to determine the feasibility of a single index for classifying individuals. If feasible, the instrumentation could be refined toward this goal.

Given the cognitive-behavioral index (CBI), the researcher could begin to explore emotive differences by cognitive type as well as to compare differences

across media. For example, aside from the arousal differences already specified, it would be suggested that:

H_1: The high CBI child will use print media more than will the low CBI child.

H_2: The low CBI child will spend more time watching TV than will the high CBI child.

H_3: The low CBI child will indicate that he likes watching television more than will the high CBI child.

Osler (1970) presents evidence which suggests that, in general, low-income disadvantaged children will develop less complex cognitive structures than will more advantaged middle-income children. This being the case, cognitive structure may be a good predictor of differences between class levels. At the same time, it provides an explanatory theory for class differences already noted in the research (Greenberg and Dervin, 1970). The following would be predicted:

H_4: The low CBI child will possess less ability to distinguish fantasy from reality than will the high CBI child.

H_5: The low CBI child will indicate that what is on TV is "more like real life" than will the high CBI child.

In the area of programming preferences, differences would be expected such that:

H_6: High CBI children will prefer "educational" or news programs to a greater extent than will low CBI children.

H_7: High CBI children will show less preference for highly stereotyped programming than will low CBI children.

H_8: High CBI children will show more preference for programs which typically contain subtle humor or highly complex plots than will low CBI children.

The overall implications of the CBI conception for communication research in general are promising. Since the differences posited are in the cognitive-behavioral mix of the individual, any form of communication could be studied. For example, Schroder and Crano (1965) studied processes of conflict resolution among differing cognitive types. Brock (1962) examined attitude change from the structural approach. Jones (1961) has studied identification processes, while Crockett (1965) has dealt with "impression formation" and Goodnow (1970) with cultural variations in cognitive skills. All of these areas are relevant to the communication process.

In conclusion, the cognitive-behavioral approach would provide the communication researcher with a framework from which to examine media effects on the individual. The present paper has suggested that this approach would be effective in predicting affective arousal states of the individual and, in turn, probable overt behaviors.

BIBLIOGRAPHY

Bannister, D., "Conceptual Structure in Thought Disordered Schizophrenics", Journal of Measurement Science, 106, 1960, p. 1230.

Bannister, D., and Mair, J.M.M., The Evaluation of Personal Constructs, New York: Academic Press, 1968.

Bannister, D., "Personal Construct Theory: A Summary and Experimental Paradigm", Acta Psychologica, 20, 2, 1962, p. 104.

Bartlett, Sir Frederic, Thinking, London: Allen and Unwin, 1958.

Berlyne, D.E., Conflict, Arousal, and Curiosity, New York: McGraw Hill, 1960.

Bevan, W., "The Pooling Mechanism and the Phenomenon of Reinforcement", in O.J. Harvey (ed.), Motivation and Social Interaction——Cognitive Determinants, New York: Ronald Press, 1963.

Bieri, J., "Cognitive Complexity—Simplicity and Predictive Behavior" Journal of Abnormal Social Psychology, 51, 1955, p. 263.

Bonarius, J.C.J., "Research in the Personal Construct Theory of George A. Kelly" in Progress in Experimental Personality Research, Vol. 2, Maher, B.A. (ed.), New York: Academic Press, 1965.

Brock, T.C. "Cognitive Restructuring and Attitude Change", Journal of Abnormal and Social Psychology, 64, 4, 1962, 264-271.

Crockett, W.H., "Cognitive Complexity and Impression Formation" in Progress in Experimental Personality Research, Vol. 2, Maher, B.A. (ed.), New York: Academic Press, 1965.

Davitz, J.R., The Language of Emotion, New York: Academic Press, 1969.

DeFleur, M.L., Theories of Mass Communication, New York: David McKay Co., 1966.

Dienes, Z.P. and Jeeves, M.A., Thinking in Structures, London: Hutchinson Educational, 1965.

Feshbach, S., and Singer, J., Television and Aggression, San Francisco: Josey-Bass, 1971.

Gewirtz, J.L., "A Factor Analysis of Some Attention-Seeking Behaviors of Young Children," Child Development, 1956, 27, pp. 17-36.

Goodnow, J., "Cultural Variations in Cognitive Skills," in Hellmuth, J. (ed.), Cognitive Studies, New York: Brunner/Mazel Publishers, 1970.

Gordon, G., The Languages of Communication, New York: Hastings House, 1969.

Greenberg, B. and Dervin, B., Use of the Mass Media by the Urban Poor, New York: Prager, 1970.

Haber, R.N., "Perception and Thought: An Information-Processing Analysis", in Voss, J.F. (ed.), Approaches to Thought, Columbus, Ohio: Merrill Publishing, 1969.

Harvey, O.J. "Cognitive Aspects of Affective Arousal" in Tomkins, S.S., and Izard, C.E., (eds.), Affect, Cognition, and Personality: Empirical Studies, New York: Springer Publishing Co., 1965.

Harvey, O.J., Hunt, D.E., and Schroder, H.M., Conceptual Systems and Personality Organization, New York: Wiley, 1961.

Harvey, O.J., (ed.) Motivation and Social Interaction-Cognitive Determinants, New York: Ronald Press, 1963.

Hebb, D.O., "Drives and the Conceptual Nervous System", Psychological Review, 62, 4, 1955, pp. 243-254.

Jacobsen, D., The Biology of Emotions, New York: Academic Press, 1969.

Jones, R.E., "Identification in Terms of Personal Constructs," Journal of Consulting Psychology, 25, 1961, p. 276.

Kagan, J., and Moss, H.A., Birth to Maturity: A Study in Psychological Development, New York: Wiley, 1962.

Kelly, G.A., The Psychology of Personal Constructs, Vol. I and II, New York: Norton, 1955.

Mair, J.M.M., "Some Problems With Repertory Grid Measurement, I: The Use of Bipolar Constructs", British Journal of Psychology, 58, 1967.

McClellan, D.C., Atkinson, J.W., Clark, R.A., and Lowell, E.L., The Achievement Motive, New York: Appelton-Century-Crofts, 1953.

Patterson, C.R., and Beach, L.R., "Man As An Intuitive Statistician", Psychological Bulletin, 1967, 68, pp. 29-46.

Schroder, H.M., Driver, M.J., and Streufert, S., Human Information Processing, New York: Holt, Rinehart and Winston, 1967.

Stevenson, W., The Play Theory of Mass Communication, Ill: University of Chicago, 1967.

Thomas, A., Chess, C., and Birch, H.G., "The Origins of Personality", Scientific American, 223, 2, August 1970, 102-109.

Torgerson, W.S., Theory and Methods of Scaling, New York: Wiley, 1958.

Vernon, M.D., The Psychology of Perception, Baltimore: Penguin Books, 1962.

Warren, N., "Social Class and Construct Systems: An Examination of the Cognitive Structure of Two Social Class Groups," British Journal of Social Clinical Psychology, 5, 1966, p. 254.

Weiss, W., "Effects of the Mass Media of Communication" in The Handbook of Social Psychology, Vol. 5, G. Lindzey and E. Aronson (eds.), Reading Massachusetts: Addison-Westley, 1969.