This study deals with the cognitive nature of educational disadvantage. It operationalizes generic requirements for school achievement, and finds them to be derivatives of the analytic conceptual style. Many children from low income homes, however, demonstrate a relational conceptual style. Conceptual styles are found to be effective predictors of academic success when common demographic variables, native ability and general information repertoires are held constant. It is suggested that conceptual styles are developed, stimulated, and reinforced in the user's style of primary group participation. By using those variables, it is possible to predict the development of new response patterns through changes in style of primary group membership, and to explain mixed and conflicting types of scores as well as polar response types. Conceptual styles are also used to distinguish between deprivation and culture difference, to comment on nonverbal tests of intelligence, and to identify cognitive components in the phenomena of good, poor, under and over achievement. (Author/KJ)

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THE RELATION BETWEEN SOCIO-CONCEPTUAL STYLES AND

ORIENTATION TO SCHOOL REQUIREMENTS

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THE RELATION BETWEEN SOCIO-CONCEPTUAL STYLES

AND ORIENTATION TO SCHOOL REQUIREMENTS

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The Relation between Socio-Conceptual Styles and Orientation to School Requirements *

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This study is one of several which deal with the cognitive nature of educational disadvantage. It operationalizes generic requirements for school achievement, and finds them to be derivatives of the analytic conceptual style. Many children from low income homes, however, demonstrate a relational conceptual style. Conceptual styles are found to be effective predictors of academic success when common demographic variables, native ability and general information repertoires are held constant. In addition, analytic and relational conceptual styles are found to be intimately associated with formally organized and shared-function primary group participation, respectively, among their users. It is suggested that conceptual styles are developed, stimulated, and reinforced in the user's style of primary group participation. By using those variables, it is possible to predict the development of new response patterns through changes in style of primary group membership, and to explain mixed and conflicting types of scores as well as polar response types. Conceptual styles are also used to distinguish between deprivation and culture difference, to comment on non-verbal tests of intelligence, and to identify cognitive components in the phenomena of good, poor, under- and over-achievement.

THIS PAPER IS a synthesis of the findings of four separate studies exploring the nature of educational disadvantage. It addresses itself to the problem of educating and integrating sizable numbers of children, mostly from low-income homes, who have the capacity to achieve but who are unable or unwilling to communicate with the demands of the school. Most current literature explains this condition in terms of class and race discrimination. These studies offer an alternative explanation; that is, that the nature of deprivation and cultural difference may be understood in terms of certain socially induced learning characteristics. Although these studies are still exploratory, they suggest the following hypotheses: (1) that these learning characteristics have certain predictable social and psychological consequences, (2) that they are critical determinants of many of the school performance and personality char-

acteristics of pupils, and (3) that these learning characteristics are formed and reinforced by social interaction in family and friendship groups, the structures of which are reflected in classification mechanisms and modes of cognitive organization.

Three studies preliminary to the collection and analysis of data about pupils developed some of the constructs used in the analysis. A brief summary of these early phases follows. The first study defined school requirements through a content analysis of the most commonly used standardized tests of intelligence and achievement along with a sampling of researchers who develop and revise these tests. This procedure identified three types of requirements. They were: (1) breadth and depth of informational content, (2) the ability to abstract analytically, and (3) the ability to extract salient information from its embedding contexts (field articulation). Compensatory education has been concerned primarily with the first of these requirements, i.e., helping children with limited backgrounds to acquire more information about the world. Abstraction and field articulation skills, the second and third requirements, have been assumed to be constants. Although these reflect only one mode of cognitive organization, intelligence tests have traditionally been based on the assumption that the ability to use these skills in unfamiliar, as well as familiar, contexts is a measure of intelligence. Modes of cognitive organization other than those required by these tests, however, are the subject of a substantial literature. This literature indicates that these skills are independent of intelligence and are definable without reference to specific substantive content.

The second study analyzed and reconceptualized the relevant psychological and linguistic literature. This procedure identified two clear response patterns following on two dominant modes of conceptual organization. The mode of selecting and organizing perceptions demanded by the school (and by society at large) is called "analytic"; that which characterizes cognitive functioning in low-income environments is called "relational." Appendix A summarizes the findings of this study. Correlates of the two dominant modes of conceptual organization cover a wide range of classic test behaviors, from physiological responses and psycho-physical judgments to the verbal content in interviews and responses on projective tests. One critical group of studies indicates that, although the analytic conceptual style appears relatively stable over the lifetime of the individuals tested, among children who enter school with relational patterns of response, movement can be observed from relational responses to analytic ones during the first few years in school. Recognizing that the requirements of the school environment are largely analytic, this suggests that conceptual style can be influenced, especially during these early years. It was concluded from this study that conceptual styles may be more critical determinants of pupils' ability to relate to school requirements than are other factors usually associated with class and race discrimination.

The third study gathered information about the characteristics of family and friendship group styles in low-income environments during almost a year of interviewing in a variety of slum communities. From the data gathered in these interviews and from observations, the relevant characteristic appeared to be their lack of formal organization. The most common family and

friendship group structure in slum communities, regardless of differing ethnic origins of their members, was found to be that in which critical functions are indiscriminately performed or widely shared, rather than assigned to status-roles as in the typical middle class structures. Economic marginality may make necessary this sharing of functions and thereby the sharing of identities, with the result that individuals participating in them perceive themselves to have meaning only within the framework of their social contexts. If, in addition, certain types of conceptual organization are necessary to the proper functioning of these groups, and are reinforced by each item of communication which passes among the members, such a mental heuristic as appears on psychological tests might be produced.

The next study dealt with the relationship between formal family and friendship group structures and analytic or relational conceptual styles, and between conceptual styles and achievement in school. Although test responses in all dimensions are considered to be choice behaviors whether or not choice is available, in the study which follows, primary group structure is used in two different ways in the analysis. In some instances, primary group structure is used as an independent variable, postulating its importance in the formation and reinforcement of the dominant mode of conceptual organization, i.e., as a critical factor in socialization. In another instance, as in the change of friendship group style over family style, it is used as another choice behavior in which the dominant mode of abstraction manifests itself as an organizing mechanism for the formation of new social groups, as well as for the organization of information.

A test instrument was designed to determine the extent to which analytic and relational modes of abstraction were dominant modes of conceptual organization in each of three different settings. These were: (1) in the abstract, using psychological tests for mode of abstraction and graphic field dependence; (2) in language behavior, using a synonym set and a tell-a-story test for both lexical and syntactic findings; and (3) in social contexts using a 72 item attitude questionnaire. (See Table 1.) This method resulted in a kind of "triangulation" on mode of abstraction and field articulation skills through both the instruments and the methods of three different disciplines (psychology, linguistics, and sociology). Since observations are felt to be the result of a transaction between the observer and the observed, it was hoped that this multi-dimensional instrument would increase the validity of the observations by reducing disciplinary and own-culture bias.

In all, more than 200 test behaviors were sampled for each pupil in the population studied.[1] This population consisted of 66 16 and 17 year olds; 11 hard core youth, 46 pupils participating in a compensatory program for low-income youth, and nine middle class high achievers from both public and parochial schools. Common demographic variables were taken into account and a correlation matrix was produced to determine the factors which seemed to effect the two response patterns as well as to find in-

[1] The sample, sample design, and method of analysis are described in detail in the monograph, *Primary Group Structure, Socio-Conceptual Styles and Achievement in School,* University of Pittsburgh: Learning Research and Development Center, 1967.

TABLE 1

TEST DIMENSIONS AND CONCEPTUAL STYLES

Test Dimensions	Conceptual Styles		Tests Used
	Analytic	Relational	
1. *Cognitive Style* 1) Mode of abstraction	analytic stimulus centered parts specific	relational ego centered global	1) Sigel Test of Conceptual Style (19 plates)
2) Field dependence	field independent	field dependent	2) A paper and pencil adaptation of the Witkin Graphic Figure Embedded Test
2. *Language Style* 1) Lexical (mode of abstraction only)		descriptive	1) A 25 word stimulus set taken, en large, from standardized tests of achievement
2) Syntactic (field dependence only)	elaborated code low predictability	restricted code high predictability	2) Tell a story test for a.) syntax and b.) content
3) Type of content preferred	real, achievement	imaginative, luck	1. type of content 2. ego-centered content 3. embedded content
3. *Perceptions of Self in his Social Context* 1) Mode of abstraction	outer-centered impersonal	self-centered ego-involved	3. A 72 item attitude set with discrete items and four Guttman Scales for: 1) mode of abstraction 2) embeddedness 3) difference vs. variation 4) luck vs. achievement
2) Field dependence	independent	dependent	

Guttman I
(Example)
1) To be like someone you admire, it is more important to imitate his clothes and mannerisms than to copy what he thinks and believes
2) A person's outward appearance gives you a good idea of what he is like
3) . . . .

Guttman II
1) I wouldn't want to be rich if my family couldn't be rich too
2) How we use words depends mostly on where, when, and to whom they are spoken
3) . . . .

Guttman III
1) Men and women are completely different in every way
2) People can be divided into two distinct classes; the weak and the strong
3) . . . .

Guttman IV
1) It doesn't pay to work your heart out. It's really luck that counts
2) Every person should make a strong effort to improve his social position
3) . . . .

consistencies in the test batteries themselves. However, the main body of the analysis consisted of the Guttman scaling of all sets of responses on all of the dimensions. The instrument included a set of responses dealing with the distribution of critical functions in family and friendship groups and 18 sub-tests of the Project Talent achievement inventory which had been "normed" on a five percent national sample. Much corroborative information was available on the sample including cumulative school records, reports of social workers, psychologists, teachers, and other school personnel. Since the research question involved the isolation of new variables to explain why some pupils with adequate intelligence were unwilling to or unable to communicate with the demands of the school, the range of intelligence was average or better (94 to 129). The test response patterns of good and poor achievers were then cast on a symmetrical matrix which made the isolation of response types possible. Four types emerged. They were: high relational—poor achiever (polar relational); high analytic—good achievers (polar anal, _c); pupils with mixed or conflicting response patterns; and pupils with middle range response patterns. The characteristics of each of these four types are described in Tables 2 to 7.[2]

1. Response Characteristics of those Pupils in the Polar Categories

Two polar response types (polar relational and polar analytic) were found to have the test response characteristics described in Table 2. These pupils demonstrate high degrees of consistency in the use of their dominant mode of abstraction and their field articulation skills in a wide variety of contexts including the primary group structure chosen for membership. In addition, significant correlations could be established in the polar cases between primary group style and conceptual style, and between conceptual style and school achievement. Other observations were (a) the frequency of Negroes was higher in the relational group (this may have been due to the greater frequency of shared function primary group style among the Negroes tested) and (b) the frequency of boys in the polar groups was much higher than that of girls.

2. The Pupils with Mixed Response Patterns

Mixed Response I: One clear type of mixed response pattern was identifiable; it was represented by conflicting conceptual style and field articulation scores. (Theoretically, high analytic skills should also be accompanied by high field articulation skills.) In those cases in which these two scores were in

[2] A streamlined version of the test was administered again in the Fall of 1966 to a sample of 500 public and parochial school pupils of the same age using a full range of intelligence from barely educable to gifted pupils, and a full range of social class origins which appear in the school system. Early analysis of this sample finds that the major differences occur in (1) the information components of their responses and (2) in the level of abstraction used by them. Conceptual style characteristics and the resultant typology were found to be the same as they appeared on the exploratory test sample described here.

TABLE 2

"RELATIONAL" AND "ANALYTIC" POLAR RESPONSE PATTERNS

Polar Relational	*Polar Analytic*
High relational conceptual style scores	High analytic conceptual style scores
Low field articulation scores	High field articulation scores
High no. of words on synonym set	Average no. of words on synonym set
High percentage of descriptively abstracted words on synonym set	Low percentage of descriptively abstracted words on synonym set
High Guttman "relational" on all four scales	High Guttman "analytic" on all four scales
High Polar Response Style—more than 20% responses of "strongly agree" or "strongly disagree"	Response Style 80% or more Middle Range responses
Story: ego-centered	Story: non-ego-centered
Story content indicated embeddedness	Story content indicated non-embeddedness
Story content was "luck" or "fantasy"	Story content was "reality" or "achievement"
High Guttman shared-function family style	High Guttman formal-family style
High Guttman shared-function friendship group style	High Guttman formal-friendship group style
N=22	N=19

conflict, there appeared to be a conflict in reality organization. (See Table 3: Mixed Response Pattern I)

Not only was the story content of a fantasy nature, but these pupils responded to as many as 90 percent on the attitude statements with "undecided," and vacillated in their responses to the test of cognitive style. Of these pupils, five out of seven were girls. This caused some speculation as to the reasons for girls to choose embedded responses when they know how to abstract analytically. One explanation might simply be that girls do not like to be considered analytic, i.e., the behavioral correlates of the analytic mode of abstraction do not lend themselves to the female image in this society. The more likely possibility, however, is that graphic embeddedness as an abstract skill is influenced by the preference for shared function social groups. This suggests that field embedded skills and a desire for social embeddedness have reciprocal effects.

The above observation about sex differences was borne out by further analysis of the data. There appeared to be a marked preference among girls

TABLE 3

CHARACTERISTICS OF MIXED RESPONSE PATTERNS

Mixed Response Pattern: Conflict in Skills
Conflicting skill scores: high composite analytic conceptual style score and high composite embedded scores
Story content: "fantasy"
Response style "high undecided" (more than 20% of attitude statements were answered "undecided" some of these were as high as 90% undecided)
Vacillating responses on test of conceptual style

for shared function groups and embedded responses, regardless of their abstracting skills. In addition, in all of the sub-groups, the girls had fewer polar responses and more mixed responses. The absence of polar variation among girls may be due to the similarity of shared roles played by women in the home regardless of social class and conceptual skills.

3. Pupils with Middle Range Responses

Within the dimensions of the test pattern, itself, no other configurations appeared of the type described above. Attention was then directed to those pupils whose family and friendship group styles differed, to the direction of this change, and to its effect on portions of the test battery. The following observations were made:

(1) If the change were from shared function family to formal friendship group or club (see Table 4: Mixed Response Pattern I), movement can be observed from the patterns characteristic of shared function environments to those which characterize analytic ones.

TABLE 4

Middle Range Response Pattern I: Conflict in Family and Friendship Group Type

Movement *from* shared function family style *to* formal friendship group style
Middle range composite Guttmans on both skills
Story content "achievement"
Response style 80% middle range type

This would seem to indicate that a change in the style of primary group chosen for membership is an earlier indicator of a desire to achieve and to relate to the analytic requirements of the school than are test scores. It could be predicted that pupils with this response configuration would benefit most from compensatory programs.

(2) When movement was in the other direction, i.e. from formal family style to shared function friendship group style (see Table 5: Middle Range Response Pattern II) this was taken as an indication of a deliberate choice of the shared type of social environment even when both types of skills were known, and presumably both types of environments were available. In the five cases in which this could be demonstrated, the pupils involved were deeply involved in gang activities, or were recruiters among the group for the Black Muslims.

4. Socialization and Choice Patterns

Our findings led us to distinguish between two types of pupils: (1) those who presumably knew and used well only *one* type of conceptual style indicating socialization impact and (2) those who knew *both* and made a choice of a preferred style (choice patterns). The first group appeared to occupy polar positions on the test instruments and to have the same types of family and friendship group styles. The second group had mixed or conflicting skills and both types of family and friendship group participation. In this

group the direction of movement was important. These conclusions are reported in Table 6.

Applications

It will be remembered that these conclusions deal only with the *skill* aspect of standardized intelligence and achievement tests. The other requirement, breadth and depth of informational content is independent, and adds another dimension to the school orientation picture. The permutations of the information skills requirements does help to explain inconsistencies between tested IQ and achievement as measured by grade average and the Project Talent skill and information sub-routines. A table of these expectations follows as Table 7.

Permutations of the information-skill requirements of standardized test instruments may also be used to distinguish between "deprivation" and "culture difference" or "culture conflict." Using this framework, "deprivation" relates to limited information. In cases of "deprivation" only, compensation, in its present form of enrichment, may be expected to produce increments

TABLE 5

Middle Range Response Pattern II: Conflict in Family and Friendship Group Type

Movement *from* formal family style *to* shared function friendship group style
Middle range composite Guttmans on both skills
Story content "luck" or "fantasy"
Behavior problems in school
Gang activities outside of school

in achievement, self-confidence, and in intelligence test scores. "Culture difference" and/or "culture conflict" relate to different and/or conflicting[3] conceptual skills between those required by the school and its test instruments, and those brought to the school by pupils from shared function primary group environments. These pupils may be deprived as well as culturally different. Whether or not this is the case, enrichment alone, without changes in these conceptual skills (assuming this is possible), could not be expected to produce increments in achievement or in their orientation to the other requirements of the school. A third, and separate dimension of culture conflict arises from negative value judgments on the parts of teachers of culturally different children, on the basis of the socio-behavioral correlates of different conceptual styles and not on the basis of the conflicting learning skills themselves. Individual expressions of specific discrimination based on class and race is considered idiosyncratic. Its importance as separated from the factors described above has yet to be systematically explored.

[3] For the problem of "culture conflict" or the mutual incompatibility of analytic and relational frames of reference see Rosalie Cohen, Gerd Fraenkel and John Brewer, "The Language of the Hard-Core Poor: Implications for Culture Conflict," *Sociology Quarterly,* X (1) 1968. It found, from a linguistic analysis of the language structure, four areas of mutual incompatibility which reflect differing basic assumptions about the nature of relevant social reality as expressed in standard and hard core usage.

TABLE 6

Single Type and Mixed Type Group Experience and Test Response Categories

Non-choice: one type experience:

Formal family + formal friendship group——————→	Consistency in test dimensions High analytic conceptual style
Shared function family + shared function—————→ friendship group	Consistency in test dimensions High relational conceptual style

Choice: mixed experience:

Movement from:

Shared function family to formal————————→ friendship group	Mixed response Candidates for social mobility
Formal family to shared function friendship group——→	Mixed response Candidates for mass movements, gangs, aggressive in-groups, etc.

Finally, implications for the use of non-verbal intelligence tests for children with non-analytic conceptual skills may be drawn on the basis of these same requirements of standardized school tests. Non-verbal intelligence tests are entirely made up of contentless, analytic figures. This characteristic reduces the opportunities of relational children to score on these tests, rather than enhancing them. The absence of content in which to demonstrate their experience backgrounds, thus mitigating the effect of the conceptual skill conflict, removes their major opportunities to score. In the sample tested, of the seven under-achievers (those with high I.Q.'s and low achievement), although none exceeded the 50 percentile on the Project Talent inventories and some could not exceed the 15 percentile, nevertheless, they placed in the 85 to 95 percentile on two sub-routines, Scientific Attitude and Abstract Reasoning. A content analysis of the achievement inventory found that these two sub-routines were the only ones in which the problems were placed in concrete contexts. This would seem to suggest (1) that intelligence and conceptual styles are independent, and (2) that non-verbal tests are less "culture-free" than the ordinary variety.

A case analysis of two pupils follows, one high analytic and one high

TABLE 7

Skill-Information Combinations and Orientation to School Requirements

High analytic skills, high information————→	High achievement, high IQ, high success in school
High analytic skills, low information————→	High achievement, average IQ, anxiety (over-achiever)
High relational skills, high information——→	Low achievement, high IQ, behavior problems (under-achievers)
High relational skills, low information——→	Low achievement, low IQ, complete inability to relate to the school, withdrawal and drop-out

TABLE 8

A COMPARISON OF TWO CASE STUDIES FROM THE "GOING UPWARD" SUBSAMPLE

	Pupil "R"	Pupil "A"
Pupil Type	High Relational	High Analytic
IQ (ninth grade)	118	122
Grade Average (7th to 10th grade)	D—	A
School Assessment Projection	Under-achiever; potential drop-out	Good-achiever; needs financial aid to become college material
Project TALENT Achievement Inventory (Percentiles against national norms)		
General Screening	6 Percentile	99 Percentile
Vocabulary	15 "	89 "
Literature	10 "	90 "
Music	5–10 "	81 "
Social Studies	4 "	94 "
Mathematics	20–25 "	84 "
Physical Science	3 "	81 "
Biological Science	10–15 "	94 "
Scientific Attitude	94 "	95 "
Aeronautics and Space	5 "	55 "
Electronics and Electricity	5 "	24 "
Mechanics	15–20 "	60 "
Farming	10–15 "	85 "
Home Economics	10 "	70 "
Sports	15 "	90 "
Abstract Reasoning	50–95 "	50 "
Word Creativity	65 "	50 "
Reading Comprehension	39 "	88 "

	Pupil "R"	Pupil "A"
Teacher Assessment		
Motivation	Poor	Excellent
Verbal fluency	Poor	Excellent
Math comprehension	Poor	Excellent
Out-of-school activities		
Juvenile Record	Yes (for rape and armed robbery)	No
Clubs	Leader of a street gang	Secretary of a boy's club
Demographic Characteristics		
Race	Negro	White
Age	17	16
School	Westinghouse	St. Canice
Parents	Father not living; mother does not work	Mother unemployed; father not living
Parents education	Father and mother some high school but did not graduate	Father high school graduate, mother some high school
Parents born in this country?	Yes	Yes
Another language spoken at home?	No	Yes, Slovak
Religion	Mother is Seventh Day Adventist	Catholic
Occupation of head of family	"On Welfare"	"DPA"
Own or rent the house in which you live?	"Own"	"Own"
Income	$1,788 for six people	$3,562 for six people
Pupil's estimate of family income	"below $2,000 per year"	"I can't estimate this"
Pupil's description of family financial condition	"Have the necessities"	"Fairly comfortable"
Pupil's perception of own class	"Middle class"	"Middle class"
Notable Test Response Characteristics		
Story content	Luck	Achievement
Synonym (25 word stimulus set)		
Return	Returned 81 words (despite teacher reports of low verbal fluency and placement at the 15 percentile on the TALENT Vocabulary sub-test.) Of these, 71 were non-analytically abstracted and, thus, of little use in school.	Returned 37 words, only eight of which were abstracted non-analytically. (Average synonym return is 30-35 words, with more than 80% abstracted analytically.)

relational, with intelligence and social class held constant to demonstrate the differences which follow on differing conceptual styles. Note the Abstract Reasoning and Scientific Attitude scores and the "noteworthy test responses."

Summary

This paper attempts to isolate some critical factors in the response patterns of pupils from low-income environments which may account for their inability to communicate with the demands of the school. This conflict is represented as two confliciting patterns of specific school related test behaviors. These differing modes of conceptual organization manifest themselves in (1) abstract settings, (2) in language-patterns, (3) in attitudes about themselves in their school contexts, (4) in the primary group structures chosen for membership, and (5) by inference in a wide variety of socio-behavior correlates of their dominant conceptual style. Since one type of pattern is rewarded in the school setting and the other is not, the dominant mode of conceptual organization used is related to achievement in school. An attempt is made to predict the development of new response patterns through changes in type of primary group membership, and to explain mixed and conflicting types of scores as well as polar response types. Finally, the demands of the school are used to provide distinctions among a variety of previously ambiguous concepts which are used to design programs for low-income youth, and to suggest how the definition of conceptual skills may add to knowledge of the educationally disadvantaged.

APPENDIX A

TAXONOMY OF TEST RESPONSE CHARACTERISTICS AND SOCIO-BEHAVIORAL CORRELATES OF CONCEPTUAL STYLES

Test	Conceptual Styles	
	Analytic	Relational
Cognitive Style	—Mode of abstraction is stimulus centered sensitivity to parts of objects —awareness of obscure, abstract non-obvious features	—Mode of abstraction is self-centered —sensitivity to global characteristics —awareness of obvious, sensed features
Sigel Test of Conceptual Style Figure Sort Tests Behavior Sorting Test Object Sorting Test Photo Sorting Test Pettigrew's Category Width Test	—many abstractions based on parts of objects and features of these parts "arms akimbo . . . etc." —many piles —can resort many times drawing new relationships each time —groups formed represent minimal conceptual distance from properties of the objects	—few abstractions—free association stimulated by stimuli "two boys . . . etc." —few piles —cannot resort—most obvious relationship remains constant —groups formed represent greater conceptual distance from the properties of the objects
Geometric Form Drawing Test	—relative differences are marked by the ratios of the shorter and longer sides	—little perception of relative differences
Memory Organization	—organization of words for commitment to memory based on varied types of relationships	—organization of words functional and inferential
Word Association	—noun-noun sequences; verb-verb sequences	—meaning critical —inferential sequences —recall functionally related words
Psycho-physical Judgments requiring selective attention (facilitation-inhibition phenomena) e.g. Embedded Figures Tests, Size Estimation Tests, etc.	—good	—poor

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	Relational
Perceptual Vigilance	—high ability to detect changes in monotonous but constantly changing perceptual field over a long period of time	—low ability to detect changes in a monotonous constantly changing perceptual field
Serial Learning California Test of Mental Maturity	—categorical responses —analytic scores high on non-language sections	—related words —analytic scores low on non-language sections
What is learned (parts as whole)	—attaches verbal labels to parts as well as whole of geometric designs	—attaches verbal labels only to relevant wholes
Stability of Conceptual Style after Entry into School	—stable	—creation of more analytic responses and reduction of relational responses
TAT	—relatively constricted stories containing much description of the properties of the stimuli and minimal creative thematic material.	—much creative thematic material, little sensitivity to properties of the stimuli
	—stories close to physical properties of the pictures (equivalence ranges close)	—(wide equivalence ranges)
Rorschach Responses	—indistinct perceptions infrequent —high stimulus differentiation —attends to ambiguous projections of stimuli —fewer human responses, whole responses, human vs. mammalian animal responses, human movement responses, color responses and extensor vs. flexor responses	—indistinct perceptions frequent —minimal stimulus differentiation —ignore ambiguous portions of stimulus —project more life and activity into the inkblots
Reaction Time	—greater—more time is necessary for scanning —attitude more reflective	—less—time required for response to global characteristics is less —response appears impulsive

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	Relational
Verbal Content in Personal Interviews	—reluctant to be dependent on family and friends	—dependent on their families as adults
	—striving for social recognition	—less concerned with the acquisition of recognition goals
	—concern of intellectual mastery	—not confident of ability to solve intellectual problems
	—confident in their approach to challenging intellectual tasks	
	—motivated to obtain achievement oriented goals	—not motivated to achievement goals
	—categorization of statements concerning behavior is highly differentiated	—categorization of statements concerning behavior has a low degree of differentiation
Tolerance for Unrealistic experiences (e.g. simulation of the effects of motion when movement is not present)	—good	—poor
Constricted Flexible Control Impulse Control	—flexible	—constricted
	—good	—poor
e.g. Stroop's Color Word Test	—effective use of primary process learning rapid response	—ineffective use of primary process thinking, difficulty in inhibiting irrelevant, overlearned, or highly compelling motoric responses (e.g. reading the words while verbalizing the names of the colors)
Learning Related Characteristics Attention Span Concentration Depth	—can sit still long time	—short concentration span
	—deep concentration (stimulus remains constant)	—shallow concentration
Distractibility	—not easily distracted by non-relevant sounds and movements	—easily distracted
Perceptual Vigilance	—e.g. high perceptual vigilance; notice small changes in moving stimulus	—low perceptual vigilance

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APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	Relational
Intensity of Attention		
Related School Behaviors	—can do above task without utilitarian purpose	—task considered irrelevant
	—deep	—shallow
	—sees teacher as a source of information, not individual	—sees teacher as individual
	—sees teacher as appendage to a problem	—easily distracted from task
	—persistent in task orientation	—lacks confidence in ability to solve intellectual problems
	—confident in approach to intellectual tasks	—not motivated to achievement
	—motivated to achievement related goals	—fantasy
Optional Reading (content)	—reality	—fantasy, humor
Preferred Classroom Illustrations (content)	—reality	—relationship to descriptive characteristics of people and objects requires an affective response
	—stimulus centered activity does not require an affective response	—global orientation does not require long or concentrated attention
Related Personality Characteristics	—requires detachment, concentrated attention	—learning is a social experience
	—learning is non-social	—belief that significant relationships are a product of self and others
	—belief that relationships are "out there" in the stimulus	—specific causation does not rest on natural laws
	—a faith in processes and natural laws	—primary focus on self, not on stimulus
	—a willingness to listen attentively, to differentiate subtle meanings in words, a desire to look for reasons and processes, and to take directions and compare results	

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	**Relational**
Related Personality Characteristics—Cont.	—ambitious —independent —high spontaneous pseudo-motor reactivity —objective —confident of control over the environment —focus on rules of role performance not individual performance —confident in new social situations	—passive —dependent —less labile pseudo-motor reactivity —subjective —sense of powerlessness —anxious in new social situations —acts as though expecting rejection by new associates
	—preference for complexity —preference for social distance —resist the effect of interfering stimuli	—preference for simplicity —preference for social integration —more susceptible to modification by immediate perceptual experience —difficulty in inhibiting reactions to task irrelevant cues —behavior is more malleable in the face of continual changes in the stimulus field
Behavior Plasticity	—reflective attitude —a tendency to differentiate experience —ability to resist the effects of distracting stimuli —able to become oblivious of external surroundings	—impulsive —less likely to differentiate complex stimulus situation —more reactive to external stimuli
Socio-behavioral Correlates of Conceptual Style	—sedentary —capacity for sustained attention	—impulsively aggressive —less likely to withdraw from the group to work on a task —more hyperkinetic —easily angered by minor frustrations —short attention span —affectionate —rarely played alone as children —colorful vocabulary —easily give up on different tasks

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	Relational
Language Style **Lexical** **Mode of Abstraction**	—analytic abstraction —words have formal meanings —e.g. *money*—coins, cash, currency, etc., *wine*—port, sherry	—descriptive abstraction —words have meanings specific to certain contexts; they are concrete with much use of visual and tactile symbols —e.g. *money*—green, bundle, trash, etc., *wine*—blood, slop, molasses —rules for new verbal selections tie actors to action, causes to results, means to ends —expressions are colorful —many idiomatic expressions —low level of generality
Use of Synonyms	—synonyms used	—few synonyms, greatly reduced overlap of semantic ranges —a great variety of words specific to specific situations or to certain characteristics or functions
Distinctive Feature Analysis	"token into type" constructions few and used for new developments —depersonalized —euphemisms not very common —word choices relate to bundles of features of objects or persons and to prototypical situations —many forms offered for generalization and comparison —change not too rapid comparatively —outer-centered orientation —meaning is not dependent upon extra-verbal context —critical analysis of meaning verbalized	—"token into type" constructions common for old objects —personified (reversal) —euphemisms and reverse euphemisms common —choices relate to individual features of objects or individuals and to specific situations —few mechanisms for generalization and comparison —rapid change in signifiers of the language —self-centered orientation —meaning dependent on time, place, authority, and other social relationships between communicants —meaning embedded; not verbalized

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	**Relational**
Syntax	—elaborated code; grammatically complex —low predictability —sentences of varied lengths —usually finished; good syntax —periods at ends of thoughts —many subordinate clauses —integrity of speech sequence —informational content has integrity —much use of adjectives and adverbs —discretionary use of impersonal pronouns —reinforcement is direct and explicit	—restricted code; grammatically simple —high predictability —short sentences —often unfinished; poor syntax —simple and repetitive use of conjunctions —little use of subordinate clauses —inability to hold a formal subject through a speech sequence —dislocated informational content —rigid and limited use of adjectives and adverbs —infrequent use of impersonal pronouns —sympathetic circulatory for reinforcement (e.g. "you know . . ." "don't say a word . . ."
General Characteristics	—verbally explicit —verbal arrangement closely fits specific referents —verbal planning promotes a high level of syntactic organization and lexical selection —preparation and delivery of explicit meanings is the major function of the code —the code facilitates the transmission and elaboration of the individual's unique experience —the condition of the listener is not taken for granted and the speaker is likely to modify his speech in the light of the special conditions and attributes of the listener	—not verbally explicit —structure of speech is simple; the extra-verbal component is a major channel for the transmission of individual qualifications —meanings may be highly condensed —speech is impersonal; it is not tailored to fit a given referent —the intent of the listener is taken for granted

Cohen

APPENDIX A—Cont.

Test	Conceptual Styles	
	Analytic	Relational
General Characteristics—Cont.	—code facilitates the verbal construction and exchanges of individualized or personal symbols	—the code facilitates the construction and exchange of communalized symbols
	—induces in speakers a sensitivity to the implications of separateness and differences and points to the possibilities inherent in a complex hierarchy for the organization of experience	
	—the ability to switch codes controls ability to switch roles	—only single code available
Delivery	—frequent pauses (hesitation phenomena) for verbal planning	—little hesitation; highly fluent
Articulation	—clear, cool deliberate	—articulatory clues reduced; sloppy; meaning carried in extra verbal channels