A DEVELOPMENTAL STUDY OF THE ORGANIZATION OF IMPRESSIONS WRITTEN FROM INCONSISTENT INFORMATION

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Harvey F. Clarizio
Major professor

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ABSTRACT

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By

Donald Stephen Biskin

Purpose

This study was conducted in order to investigate differences between ages in the organization of impressions formed from inconsistent information. The research questions and strategies were based on cognitive developmental theory.

Literature Review

Three areas of investigation were reviewed in Chapter II: studies of impression formation from inconsistent information, developmental studies of impression formation, and studies of the ontogenetic changes in moral judgment. The results of these investigations clearly support the research questions.

In summarizing the studies of the organization of impressions from inconsistent information about another it should be noted that different organizational patterns are related to the cognitive complexity of the subject. What

is of paramount importance is the fact that the definition of complexity utilized in the reviewed studies is similar to the definition of the developmental process as employed by Piaget, Werner, and the present investigator. In addition evidence was presented to support the existence of sex differences in organizational patterns.

The results of the developmental studies of impression formation indicate that differences in the organization of impressions vary as a function of age; and with increasing age an individual's written impressions of another become more differentiated and integrated. There is also evidence to support an age related shift from concrete to abstract differentiation. In addition evidence exists to support the hypothesis that females and subjects with higher I.Q.'s employ more advanced organizational patterns.

Additional support for the present investigation came from studies of the development of moral judgment. A similar theoretical orientation and two other factors made these investigations relevant to the present study. The experimental paradigms are comparable and the results bear a great similarity to the results of the studies of the organization of impressions.

Design of the Study

One hundred and forty-eight subjects, categorized on the basis of grade, I.Q. level, and sex were presented two video-taped vignettes. Each vignette was composed of five scenes. The first scene of both vignettes was neutral. Two of the remaining scenes showed an actor portraying socially acceptable behaviors, while the other two showed him portraying socially unacceptable behaviors. Upon the completion of each movie the subject was asked to write his spontaneous impression of the stimulus person.

The impressions were content analyzed according to the scoring procedure outlined by Crockett (1970). Using the derived dependent variables a multivariate analysis of variance was employed to test the research hypotheses.

Examination of the effects of grade level on the organization of the written impressions provided evidence relating to the main purpose of the study. Also examined were the effects of I.Q. level and sex on the organizational patterns.

Results

The major findings can be summarized as follows:

(1) There was a statistically significant main effect for grade for each dependent variable.

(2) There was a statistically significant main effect for I.Q. level for the degree of abstract

differentiation, level of organization, and the degree of total differentiation.

(3) There was a statistically significant main effect for sex of subject for the degree of connectedness, and the degree of total differentiation.

Post hoc analyses were conducted in order to determine the cause of a significant hypothesis test.

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Donald Stephen Biskin

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To Suzanne

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CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

Recently there has been an increasing consideration of cognitive factors in the study of social development. An area of investigation where this orientation has gained some popularity is the study of the organization of impressions that one person forms from observing the appearance and behaviors of another.

Most investigations of the organization of impressions have been oriented around the construct of cognitive complexity.

Crockett defines cognitive complexity as a cognitive system that contains a relatively large number of elements which are integrated hierarchically by relatively intensive bonds of relationship. This definition is derived from Werner's (1957) orthogenetic principle: "Whenever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration." (Werner 1957, p. 126)

The construct of cognitive complexity has been generally impotent in generating hypotheses that would result in increased understanding of the nature of social cognitions, and specifically the organization of impressions of others. Kaplan & Crockett (1968) support this criticism in stating that investigations of the organization of impressions formed from inconsistent information have been more concerned with superficial products rather than the actual organizing process. He states:

> It will be seen that the situation here (investigation of impressions formed from inconsistent information) is a special case of one in which the end is that of forming a judgment or impression about a social object and in which there are various means or routes to the end without anyone necessarily ensuring a greater correctness or veridicality than the other. An analysis and genetic ordering of these means must, therefore, ignore the secondary and here non-adjudicable issue of veridicality or correctness and concern itself with the ways in which they differentiate, weigh and integrate the diverse factors pertinent to the formation of such an impression. (Kaplan and Crockett 1968, p. 665).

Kaplan and Crockett's concern for placing cognitive complexity within a theoretical model has not been extremely popular. It is generally assumed that cognitive complexity is a very specific construct. Bieri (1968) a prolific investigator of cognitive complexity states:

> In contrast with some approaches to cognitive structure, cognitive complexity is fairly specific in its scope, being concerned only with social stimuli and with the dimensional versatility of the person in his social judgments. Such specific focus should render the cognitive structure of complexity - simplicity more directly relevant to differences in processing information. (p. 635)

It seems naive to assume that our system for organizing stimuli is different for social than physical stimuli, let alone different for inconsistent information about another than other social stimuli. Crockett (1970) assumes a more logical position concerning the nature of the organization of stimuli when stating that it does not matter what the social stimuli are, for there is some underlying process that organizes them in a similar fashion.

The narrow theoretical perspective assumed in studies of impression formation has resulted in virtually no attention being paid to the development of the structures or organizing properties underlying one's impressions of another. Studies examining cognitive complexity have almost exclusively employed adult subjects, thus not at all considering the possibility that the nature of what they call cognitive complexity varies as a function of development.

It is the purpose of this investigation to explore how the organization of impressions formed from inconsistent information about others change as a function of age. The results will allow us to make more valid inferences about the processes that determine an impressions organization.

Theoretical Rationale

The hypotheses to be investigated are generated from a cognitive developmental theoretical orientation. This theory makes the following assumptions:

(1) Basic development involves transformations of cognitive structures which cannot be defined by the parameters of associationistic learning (contiguity, repetition, reinforcement, etc.) and which must be explained by parameters of organizational wholes or systems of internal relations. These transformations are more popularly labeled stages and have the following general characteristics:

(a) Stages imply distinct or qualitative differences in children's modes of thinking or of solving the same problem at different ages.

(b) These different modes of thought form an invariant sequence, order, or succession in individual development. While environmental factors may speed up, slow down, or stop development, they do not change its sequence.

(c) Each of these different and sequential modes of thought forms a structural whole. A given stage response on a task does not just represent a specific response determined by knowledge and familiarity with that task or tasks similar to it. Rather, it represents an underlying thought-organization.

(d) Cognitive stages are hierarchical integrations. Stages form an order of increasingly differentiated and integrated structures to fulfill a common function, which is the maintenance of an equilibrium between the organism and the environment.

(2) Development of cognitive structure is the result of processes of interaction between the structure of the organism and the structure of the environment, rather than being the direct result of maturation or the direct result of learning.

(3) Cognitive structures are always structures of action, while cognitive activities move from the

> sensori-motor to the symbolic, to the verbal propositional modes, the organization of these modes is always an organization of actions upon objects. (Kohlberg 1968b, p. 348)

The above assumptions hold for cognitive development in general; the development of ways of thinking about both physical and social stimuli. Their application to social development is made more concrete by the following additional assumptions:

> (4) Social development and functioning, and cognitive development and functioning are not distinct realms. Social and cognitive development are parallel; they represent perspectives and contexts in defining structural change.
>
> (5) There is a fundamental unity of personality organization and development termed the ego of the self. While there are various strands of social development these strands are united by their common reference to a single self-concept in a single social world. Social development is in essence the restructioning of the self-concept in its relationship to concepts of other people, conceived as being in a common social world with social standards.
>
> (6) All the basic processes involved in physical cognitions, and in stimulating developmental changes in these cognitions are also basic to social development. (Kohlberg 1968b, p. 349)

A first step in attempts to elucidate the nature of the organizational structure of impressions is to examine the direction or sequence of development. Cognitive developmental theory proposes that change is characterized by two indices. One is increased independence of psychological processes from direct physical characteristics. The other is increased subordination of concrete experience to abstract integrative principles.

More specifically a lack of differentiation between self and the world characterizes the early phases of sensori-motor behavior. During this period cognitive operations depend upon concrete manipulations of objects. The next stage, concrete operations of the perceptual level, is marked by increased subject-object differentiation. At this stage the individual is less dominated by immediate concrete situations, but is still bound to that which is directly given by the senses. At the conceptual level or formal operations, the individual symbolically manipulates abstract representation between self and the world; the concrete experience of objects during this stage is subordinate to more abstract cognitions. This development is characterized by increased freedom from the domination of the immediate situation and decreased dependence on the immediate stimulus. This "permits a more accurate assessment of others. The adult is more able than the child to distinguish between the motivational dynamics and the overt behavior of personalities." (Werner 1957, p. 127)

This increased freedom from the environment is a manifestation of the increased ability to differentiate and integrate one's physical and social world. Langer (1969) states that

> Progressive differentiation and specification of action systems, their functions and structures is one

> side of development. Functions are fused with each other or they have no operative relationship to each other and operate in rigidly fixed and unstably fluctuating fashion at the onset of development. They progressively differentiate into increasing discrete yet internally integrated means of action and intended ends that operate in a flexible and stable fashion. Structures are indefinite in boundaries and diffuse in character and relationship to each other early in development. In the course of development they become differentiated into increasing definite and well articulated parts that are internally integrated. Progressive hierarchic integration and centralization of differentiated parts into the total mental organization is the other side of development. The evolving relationship between action systems is directed toward a structural hierarchization and functional integration of parts to each other and to the whole mental organization. The result is the progressive formation of a holistic mental organization such that most central and developed action systems increasingly subordinate and regulate the less developed systems. (Lange 1969, p. 92)

Harvey, Hunt and Schroder (1961) support these propositions in their discussion of conceptual development. For them concepts, in their matrix of interrelatedness, serve the cognitive function of providing a system of ordering by means of which the environment is broken down and organized, is differentiated and integrated into its many psychological facets. Like Werner (1957) and Langer (1969) they view differentiation and integration as the psychological process or activity which is integrally related to greater freedom from perceptual constraints. This freedom is defined in terms of the level of concreteness or abstractness of the individual conceptual system.

> Variations in the level of concreteness-abstractness results in differences in stimulus boundness, the

> extent to which the receiving and responding individual is restricted or can go beyond the physical characteristics of the immediately impinging stimulus in organizing his evaluation of a situation. The greater one's abstractness, the greater is his ability to transcend immediacy and to move more into the temporarily and spatially remote and the more capable he is of abstracting relationship from objects of his experience and organizing them in terms of their interrelatedness. The greater one's concreteness on the other hand, the greater the degree of stimulus "oughtness" in dictating his response, with concomitants almost opposite to greater abstractness. Furthermore, whereas the more abstractly functioning individual tends toward differentiating his world into many facets and integrating them holistically, but interdependently, the more concretistically functioning person is more likely to make only few differentiations of his environment and to leave these cognitive elements in a greater state of isolation. Thus, although both the more concretely and more abstractly functioning persons might display holistic cognitive structures and subsequent responses, the underlying basis of the two would be vastly different, the former resting on an undifferentiated totality whereas the latter underlaid by a differentiated and integrated holism. (Harvey, Hunt, and Schroder 1965, p. 25)

Investigations of the organization of impressions formed from inconsistent information could greatly benefit from adapting a model similar to those previously discussed. Crockett (1970) has made this attempt and his efforts are manifest in a scoring procedure for analyzing the organization of impressions formed from inconsistent information. He states his "system was designed to analyze the degree of differentiation and the level of hierarchic integration of impressions that have been formed from contradictory information about another person." (Crockett 1970, p. 2.)

There are two aspects of organization in Crockett's (1970) system, the degree of differentiation, and the degree of relationship or integration. The scoring system, based on these two aspects and other specified criteria, identifies five general levels of organization, each with three levels within, resulting in a fifteen point ordinal scale which varies from unintegrated to fully integrated. The five general levels are:

Aggregation.--The representation of both desirable and undesirable qualities without recognition of the inconsistancy and without reconciling that inconsistancy. In such impressions inconsistent information is differentiated but not integrated.

Univalence.--The inclusion of only undesirable or only desirable qualities in the impression. It is placed higher than aggregation because such impressions usually achieve a considerable degree of unity and integration even though the inconsistency is not faced and the inconsistent elements are not reconciled.

Recognition of inconsistency.--The inclusion of both desirable and undesirable qualities and the recognition of their inconsistency without that inconsistency being resolved.

Partial resolution.--The inclusion and integration of some but not all of the inconsistent qualities.

Resolutions.--The inclusion of inconsistent qualities and their integration within an organized whole.

Research Questions

The primary concerns of the present investigation are:

(a) Does the organization of impressions of others change as a function of age?

(b) Are there differences in the frequency and/or nature of the degree of differentiation and integration as a function of age?

(c) What are the other variables that cause differences in the organization of impressions within age groups?

Overview

In Chapter II most of the previous developmental studies of impression formation are reviewed and critiqued. In addition related research in the area of impression formation and ontogenetic changes in moral judgment will be discussed.

The sample description, experimental design, dependent variables, research hypotheses and statistical analyses are presented in Chapter III. In addition Chapter III contains descriptions of the stimulus material used in the investigation.

The results of the statistical tests are presented in Chapter IV and in Chapter V the results are discussed, interpreted, implications are considered, and conclusions and summaries are presented.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This study, while not an exact replication of any previous, is nevertheless based on the other research findings. The literature is far from saturated with studies investigating the relationship of age to impression formation or person perception.

Two areas of investigation are directly related to the present study, while a third provides validity for the assumed theoretical orientation. Studies of impressions formed from contradictory information and developmental studies of impression formation and person perceptions provide direct support for the present study; while studies of the ontogenetic changes in moral judgment support the general theoretical rationale.

Impression Formation from Contradictory Information

The general experimental paradigm utilized in developmental studies of impression formation presents subjects with contradictory information regarding another

person and asks them to describe that stimulus person. This model is based on the assumption that when given information about another which is both positive and negative some amount of conflict or disequilibrium occurs. When asked for their impression of the stimulus person, the subject may employ different means to resolve the conflict. It is the different organizational patterns of these modes of resolution that can be ordered developmentally. There are studies which utilize this paradigm, but where age is not varied. They serve the heuristic function of generating hypotheses and explanations that might be employed in developmental investigations.

One experiment of this type was conducted by Gollin (1954) who showed male undergraduates a silent motion picture portraying a young woman in five different scenes. In two scenes she was shown behaving in a manner which suggested that she was promiscuous and immoral, while in the other two scenes she was shown behaving in a manner which suggested that she was kind and considerate. The fifth scene which was neutral portrayed the women walking along talking to a female companion. Subjects descriptions of the young woman were analyzed into three predetermined categories. In the least mature category subjects included only one of the major character qualities. In this study it was either promiscuity or kindness. Intermediately complex impressions were aggregated and contained both

major character qualities, but did not in any way attempt to relate them. The most mature impressions were integrated, and characterized by the presence of both major character qualities and explicit attempts to account for their presence in the stimulus person.

Similar results were obtained by Haine and Grunes (1950) and Hayden (1955). In all three investigations (Gollin 1954, Haine and Grunes 1950, and Hayden 1955) subjects most frequently formed simplified and aggregated impressions, with the former occurring more frequently than the latter. Besides providing clues to help define different organizational patterns of impressions, these results indicate modal responses at a specified age, which would support a developmental hypothesis. Those subjects who employed more advanced organizational patterns could possibly have been more highly developed, in an ontogenetic sense, than those who employed simplified impressions.

Additional clarification of the processes and factors involved in forming impressions from contradictory information comes from studies concerned with the effects of cognitive complexity. In these studies a cognitive system is considered complex in structure when it (a) contains a relatively large number of elements and (b) the elements are integrated hierarchically by relatively extensive bonds of relationship (Crockett 1965). The possible relationship between cognitive complexity and

cognitive development adds further importance to these investigations.

The procedure generally employed in these investigations is to initially pretest subjects to determine their level of cognitive complexity; this is then followed by the presentation of some form of contradictory information about another person. The subjects are requested to describe the stimulus person in either a spontaneous impression or a more structured response. The descriptions are analyzed and categorized according to specific criteria, and then related to the subjects level of cognitive complexity.

Mayo (1959) and Rosenkrantz and Crockett (1965) used similar designs. Their subjects heard information about another in two univalent blocks. After each block they were requested to write their impressions of the stimulus person. Mayo (1959) found differences between high and low complex subjects in regard to changes from initial to later impressions. High cognitively complex subjects employed less univalence in the final impression and changed fewer of their initial impressions when the conflict producing information was added. Low cognitively complex subjects generally solved the conflict by either ignoring part of the information given to them or by discrediting the source of it (cited in Rosenbach 1968). Thus high complex subjects seemed to modify their original

impressions by assimilating the new information to their earlier impressions while low complex subjects were bound by the original block of stimulus. Rosenkrantz and Crockett (1965) received similar results for males but not females.

After pretesting for complexity Nidorf (1961) presented subjects with the following story.

> A young man was described by six people who knew him well. The following are the salient characteristics that have been abstracted from those descriptions; pessimistic, competitive, intelligent, kind, self centered and sensitive.

After hearing the story each subject was requested to write an impression of the young man. The impressions were then classified into integrated and non-integrated categories. A point biserial correlation between complexity and category of impression (unintegrated being low and integrated high) indicated a significant positive relationship.

In a more recent study showing differences in the organization of impressions, Meltzer, Crockett, and Rosenkrantz (1966) varied cognitive complexity, level of religious values, and congruity of values with the stimulus person. For all subjects a young man was described as having both positive and negative characteristics; but for one group the young man's religious values were congruent with those of the subject while in a second group these

values were incongruent. When subjects received information about the stimulus person who supposedly had similar religious values complex subjects provided more highly differentiated impressions, however when the information was incongruent with the subjects values complexity was unrelated to the number of constructs used to describe the stimulus person.

In a study by Crockett, Gonyea, and Delia (1970) sex, type of stimulus, and complexity of subject were varied. Each subject received a set of eight statements characterizing a young man, and attributed to eight individuals who knew him well. In one condition each statement consisted of an abstract personality trait with a brief dictionary-type definition of its meaning. In the other condition each statement described behaviors, which according to the independent judges represented a concrete realization of one of the abstract traits. After reading their appropriate stimulus material subjects were instructed to write an impression of the young man.

The descriptions were analyzed according to two criteria. The degree of differentiation which is the total number of traits a subject used to describe the young man, and the level of organization which are an ordered sequence of fifteen organizational patterns, which a subject might employ in impression formation. Variance in differentiation scores produced main effects for all

three independent variables. Descriptions from abstract traits were more differentiated than those from concrete traits, women produced more differentiated impressions than men, and complex subjects had more highly differentiated impressions than less complex subjects. In addition there was an interaction between sex and complexity reflecting the fact that the difference between complex and noncomplex subjects was greater for females than males. The level of organization scores also showed a significant main effect for the type of stimulus and complexity; with the directions being the same as they were for the degree of differentiation.

In summarizing these studies of the organization of impressions from inconsistent information about another it should be noted that different organizational patterns exist and that these patterns are related to cognitive complexity. What is of paramount importance is the fact that the definition of complexity utilized in the reviewed studies is similar to the definition of the developmental process as employed by Piaget, Werner and the present investigation. In addition evidence was presented to support the existence of sex differences in organizational patterns.

Developmental Studies of Impression Formation

After reviewing this section it will become apparent how little attention has been paid to the investigation of the development of impressions formation with age. This state of affairs is surprising since the theoretical rationale for such studies is very rich. As was discussed previously both Piaget and Werner have provided the necessary theoretical base from which to launch such investigations.

The present section will be primarily concerned with reviewing and critiquing those studies that have investigated the changes in impression formation with age.

Gollin (1958) asked three groups of subjects with mean chronological ages of 11.7, 13.6, and 16.2 to write a description of the personality of a boy whose behavior they had observed in a five scene movie. The five scenes included a neutral scene showing the boy's full face and profile, two scenes in which the boy is exhibiting socially approved behavior and two scenes where he is exhibiting socially disapproved behavior. The spontaneous descriptions were analyzed according to two criteria; inference or the attempt to go beyond just the action shown in the movie and concept or the attempt to account for the diversity of the behavior.

The results indicated age and sex differences. The oldest subjects exceeded both groups of younger subjects, and the thirteen year olds exceeded the ten year olds in both inference and concept. Girls exceeded boys in both the use of inference and concept at all ages, with the exception of the youngest age group.

There were no main effects due to I.Q. level, however certain interactions became manifest. In the oldest group differences in I.Q. produced little variability in the use of inference. While in the thirteen year old group females in both intelligence categories exceed males in the same categories in the use of inference. In the youngest group subjects in the upper I.Q. category exceeded subjects in the lower category in the use of inference.

There was little use of concept in all groups of the youngest subjects, subsequently producing little variance as a function of I.Q. Of the thirteen year old subjects the only group that frequently used concept was the high intelligence females, while the other three groups differed little from the younger subjects. In the oldest age group subjects in the high intelligence group exceeded like sexed subjects in low intelligence categories, with the low intelligence females exceeding high intelligence males in the use of concept.

Gollin's (1958) results complemented by a fairly strong methodology provide support for further investigations into the development of organization of impressions. There are, however, improvements that should be made in subsequent investigations. The range of ages must be extended so as to help provide a full description and understanding of the developmental trends in impression formation. This would also help to elucidate any developmental sequence that may exist.

Gollin (1958) only employed two levels of I.Q., thus seriously restricting the possibility of finding I.Q. differences. The importance of this point lies in the fact that, if as assumed, social and cognitive development are not distinct realms, and there is a .70 correlation between summed scores on Piaget tests and Binet scores (Kohlberg 1968a); there should then be a difference in the organization of an impression as a function of I.Q.

Kohn and Fiedler (1961) investigated how differences in the age and sex of the perceiver affect their judgment about themselves and significant others. Three groups of subjects; high school freshmen, college freshmen and college seniors were asked to describe themselves and six significant others on a twenty six-point bipolar scale. Two measures were obtained from the descriptions; the similarity of ratings of each pair of persons and the favorableness with which the subject described the person.

The results indicated significant main effects for age and sex. Post-hoc analyses showed that older subjects perceived more differences in personality traits among their significant others than the younger subjects. Females on the other hand perceived fewer differences in personality traits than males.

From the viewpoint of the present research this study suffers from two serious limitations. First it relied exclusively upon the subjects judgments on isolated dimensions which were provided by the experimenter in the checklist. This procedure made it impossible to determine the natural differentiation a subject employs in his perceptions of another. It also did not allow an investigation of how the subject would relate these traits to one another. This latter point prevented a full understanding of the organizational patterns of the different groups of subjects' descriptions. Second, the age span of the subjects did not include age groups in which the developmentally early types of impressions were likely to occur.

In a position paper Kaplan and Crockett (1968) provided the necessary theoretical organization for future investigations of changes in organizational patterns of impressions with age. They postulated three basic modes of resolving inconsistent information about another person. The three modes bare more than superficial resemblance to a possible developmental sequence that could be supported by cognitive developmental theory.

The three modes are; the primitive mode characterized by an exclusive concern with a single factor, namely the various attributes or behaviors asserted by the stimulus person with no utilization of nonmanifest factors that might play a role. The intermediate mode which is characterized by going beyond the information given, is an attempt to resolve the manifest incompatibility of the traits. The advanced mode explicitly considers a multiplicity of factors other than those that are directly given. And in an attempt to resolve the inconsistency, the subject may bring into play factors such as; the contextual variability of behavior, the perspectival selectivity of sources, deeper lying personality factors, etc. Moreover these factors are not simply brought in side by side, but are considered with respect to each other, so that the sources and contexts likely to evoke the behavior eliciting a particular characterization are more likely articulated than in less advanced modes (Kaplan and Crockett 1968, pp. 666-667).

A direct result of the Kaplan and Crockett (1968) article is the scoring manual (Crockett 1970) employed in the present study. The scoring procedure described in the manual (Crockett 1970) provides criteria by which to content analyze the organizational structure of an impression formed from inconsistent information. The quantified variables derived from the content analysis in conjunction

with other criteria specified in the manual provide the necessary scale by which to judge to which of fifteen levels the organization of an impression belongs. The organizational patterns represented by the levels range from developmentally primitive to developmentally advanced.

Two previous studies of the ontogenetic development of person perceptions have employed some edition of Crockett's (1970) scoring procedure. Rosenbach's (1968) investigation comes closest in methodology and hypotheses to the present investigation. In individual interviews three groups of subjects aged 6-7, 12-13, and 18-19 were asked to give their impression of the personality of a stimulus person. In addition they replied to probing questions designed to clarify their impression of the other person. The stimulus material was a silent movie similar to that used by Gollin (1958). In two of the scenes the person to be described portrayed two socially approved behaviors, while in the remaining two scenes he displayed socially disapproved behaviors. After the movie each subject was requested to give a spontaneous description of the stimulus person, after which the series of probing questions were administered.

The impressions and responses to the questions were then content analyzed according to three criteria; inference or the number of constructs that go beyond the information actually presented in the movie, the number

of links that connected different elements of the impression (as defined in Crockett's scoring manual). There was a significant difference between ages in the frequency of inference. The number of links and the level of organization both correlated positively with age.

There was no difference between the subject's level of performance on the spontaneous description and the probing questions. This result substantiates the assumption that a group administered procedure is just as effective in collecting spontaneous impression from specified stimulus materials as one that is individually administered.

Unfortunately one severe methodological error invalidates Rosenbach's (1968) results. Instead of employing the same stimulus material for each age, a different film was presented to each group. The result was a complete confounding of age and stimulus material. Another less severe criticism is that I.Q. was not controlled. The two younger groups were enrolled at a local Hebrew School, while the older group was college freshmen.

Scarlett, Press, and Crockett (1971) conducted the most recent investigation of developmental changes in person perception. They asked three groups of boys from grades 1, 3, and 5 to describe four persons; a liked boy, a disliked boy, a liked girl, and a disliked girl. The subjects were also requested to listen to taped recorded

stories about two boys and then relate the story back to the interviewer, making sure to include descriptions of the boys.

In support of their hypotheses there was a highly significant increase with age in the average number of constructs used to describe their peers. This was accompanied by a shift from concrete to abstract constructs from the third to the fifth grade. There was also a significant increase with age in the total number of constructs subjects used in their descriptions of the fictional boys. Even though the interaction of age with the type of construct used (concrete vs abstract) was not significant; a supplementary analysis of the proportion of abstract to total number of constructs showed a highly significant effect for age.

What is of further significance is the fact that at every age high differentiating subjects employed more constructs in their impressions of the fictional characters than did low. But in the youngest and oldest group the difference between high and lows was accounted for entirely by the constructs most typical of each group. First grade highs used more concrete constructs than did lows, but first grade highs and lows did not differ in the number of concrete constructs. In contrast, fifth graders, highs used more abstract constructs than did lows but highs and lows did not differ in the number of concrete constructs.

For the third graders the differences between highs and lows resulted predominately from differences in the number of concrete constructs, the most typical type for that group, but there was also a small difference in the number of abstract concepts with highs giving more than lows as expected (Scarlett, et al., 1971, p. 449). These results support a developmental stage hypothesis, by showing common modes of response within specific age groups.

Like Kohn and Fielder (1961), Scarlett, Press, and Crockett (1971) employed an extremely restricted sample of ages, and do not deal with the integration of the description and organizational levels. However Scarlett, Press, and Crockett's (1971) results did provide further support for developmental changes in the organization of impressions.

The results of the studies reviewed in this section indicate that differences in the organization of impressions are a function of age. And that with increasing age an individual's written impression of another becomes more differentiated and integrated. There is also evidence to support age differences in levels or categories of impression formation. In addition, evidence exists to support the possibility of sex and I.Q. differences within age groups.

Developmental Changes in Moral Judgment

Additional support for the present investigation comes from Piaget's (1948) and Kohlberg's (1958, 1963a) studies of the development of moral judgment. Both these investigations base their research on the assumption that universal and regular age trends of development are found in moral judgment and that they have a formal cognitive base.

Besides the similar theoretical orientation, two other factors make the above mentioned research relevant to the present investigation. The experimental paradigm is comparable. In moral judgment research subjects are presented moral conflicts and asked how they would resolve them. The results also bear great similarity to developmental studies of the organization of impressions formed from inconsistent information.

While Piaget (1948) attempted to define two stages of moral development; heteronomous and autonomous, Kohlberg (1958) indicated that these formulations were not complete. Kohlberg (1958, 1963a) studied the development of moral judgment in the years ten to sixteen by utilizing an interview containing ten hypothetical stories that posed moral conflicts. The purpose of this procedure was to obtain responses that would reveal the cognitive organization behind a moral judgment. The children's responses,

in terms of the reasoning of their choices and their ways of defining the conflict stories, shed much light on modes of moral thinking. Evidence indicated that there were age differences in modes of moral thinking and led to a developmental typology in which six sequential stages were identified.

The earlier stages of moral judgment are based on external happenings or physical needs expressed by characters in the stories, while in the intermediate stages moral value resides in performing good or right roles in maintaining conventional order and the expectancies of others. Moral development, as defined by the most highly developed stages, is a function of conformity by the self to shared or sharable standards, rights or duties.

The stimulus boundaries, as exhibited during the earlier stages of moral development, is similar to that exhibited by the younger subjects in the developmental studies of impression formation. The older subjects in both cases are able to go beyond the information presented and employ abstract concepts to resolve the inconsistency or the dilemma.

Summary

Three areas of investigation were reviewed in this chapter; studies of impression formation from inconsistent information, developmental studies of impression formation,

and studies of the ontogenetic changes in moral judgment. The results of these investigations clearly support the rationale of research questions posed in Chapter I.

In summarizing the studies of the organization of impressions from inconsistent information about another it should be noted that different organizational patterns exist and that these patterns are related to cognitive complexity. What is of paramount importance is the fact that the definition of complexity utilized in the reviewed studies is similar to the definition of the developmental process as employed by Piaget, Werner, and the present investigation. In addition evidence was presented to support the existence of sex differences in organizational patterns.

The results of the developmental studies of impression formation indicate that differences in the organization of impressions vary as a function of age, and with increasing age individual's written impressions of others becomes more differentiated and integrated. There is also evidence to support an age related shift from concrete to abstract differentiation. In addition evidence exists to support the hypothesis that females and subjects with higher I.Q.'s employ more advanced organizational patterns than do males and subjects with lower I.Q.'s.

Additional support for the present investigation comes from studies of the development of moral judgment.

Besides the similar theoretical orientation two other factors make these investigations relevant to the present study. The experimental paradigm is comparable and the results bear a great similarity to the results of developmental studies of the organization of impressions.

CHAPTER III

DESIGN OF THE STUDY

Sample

The sample for this investigation was drawn from a central Michigan school district. Two fourth, eighth, and twelfth grade classes were randomly selected from all available classes of those respective grades. Even though the unit of selection was class, the student still qualified as the unit of analysis. This is supported by three facts; (1) all classes within the sampling frame were heterogeneously grouped on the basis of ability and sex, (2) the stimulus material was recorded on video tape and therefore constant for all six groups, and, (3) there were no systematic differences as a function of class that theoretically could have differentially affected the results.

A total of 148 subjects participated in the present study. They included 57 fourth, 48 eighth, and 43 twelfth grade students. The average ages were 10 years, 13 years 7 months, and 18 years for the fourth, eighth, and twelfth graders respectively. Tables 3.1 and 3.2 summarize the information regarding sample size and age.

Table 3.1. Sample size.

GRADE							
IQ LEVEL	4		8		12		TOTAL
	S E X						
	M	F	M	F	M	F	
H	11	8	8	8	6	9	50
M	11	11	8	7	7	5	49
L	9	7	7	10	11	5	49
TOTAL	31	26	23	25	24	19	148

Table 3.2. Average sample age.

GRADE							
IQ LEVEL	4		8		12		TOTAL
	SEX						
	M	F	M	F	M	F	
H	10-0	10-2	13-7	13-9	17-11	17-10	13-10
M	10-3	10-1	13-6	13-6	18-0	17-11	13-11
L	10-6	10-4	13-7	13-8	18-5	18-0	14-1
AVERAGE	10-3	10-3	13-7	13-7	18-2	17-11	
AVERAGE FOR GRADE	10-3		13-7		18-0		

Subjects were also classified on the basis of I.Q. and sex. These variables were included because of their relationship to cognitive development (Kohlberg 1968a) and general development (Garai and Schenfeld 1968) and their hypothesized relationship to the organization of impressions formed from inconsistent information (Gollin 1958).

I.Q. scores were available for eighth and twelfth graders from school records. The Otis Quick Scoring Mental Abilities Test: Alpha Short Form was administered to the fourth graders in order to obtain similar information. The subjects were then classified into three levels of intelligence, high = 110 or above, middle = 109 to 101 and low = 100 and below. The average I.Q. scores were 117.1, 105.4 and 90.9 for the high, middle and low subjects respectively. The arbitrary selection of the cut off points was based on the total distribution of I.Q. scores rather than on the distribution of the age and sex subsamples. This provided identical I.Q. score cutting points for all the groups. Table 3.3 summarizes the information regarding intelligence test scores.

Design

The design of the study was a 3 x 3 x 2 factorial design; with subject being classified on the basis of grade, I.Q., and sex as shown in Table 3.1.

Table 3.3. Average sample IQ level.

IQ LEVEL	GRADE						TOTAL
	4		8		12		
	S E X						
	M	F	M	F	M	F	
H	113.2	114.2	121.8	115.4	115.8	122.3	117.1
M	104.7	105.5	106.9	105.7	104.0	105.6	105.4
L	91.2	90.6	88.9	89.0	91.0	94.8	90.9
AVERAGE	103.4	103.0	105.8	103.4	103.6	107.6	104.5
AVERAGE FOR GRADE	103.2		104.6		105.6		104.5

Procedure

The data collecting procedure was conducted according to the following schedule.

The subjects came to their regularly scheduled classroom, where they were met by the experimenter and an associate. The experimenter introduced himself as a teacher and researcher from Michigan State University, interested in how children form impressions of other people's personalities. The subjects were then instructed by the experimenter in the following manner.

> I am going to show you two short movies about two real people. I want you to watch both movies closely. At the end of each movie you will be asked to describe the person, telling me what kind of person he or she is.

During these initial instructions the experimenter's associate was placing answer sheets on the students' desks.

> Please put your name, age and sex on the front page of the paper that has been handed out. Are there any questions? The first person you will see is Joel; he will be the one I want you to tell me about. He is wearing the striped shirt, and will be the only person in every scene. So watch the movie closely. Please don't say anything out loud; whatever you are thinking, keep it to yourself, and tell it later when you will be asked to describe the person. Are there any questions? O.K. here's the movie about Joel.

The movie is then shown and the experimenter states:

> That's the end of the movie about Joel. Now I want you to think about Joel and on the paper that was handed out, write your impression of him. Tell me all about him, what kind of child he is, so that I will get to know him from your description. Take as much time and write as much as you want.

This schedule was repeated twice, once for each movie. Upon completing the description of the second stimulus child, each subject was thanked for his or her cooperation.

Stimulus Materials

The stimulus material consisted of two video-taped vignettes. Each vignette is composed of five scenes. The first scene of both vignettes was neutral. It showed the object of the description in a portrait pose. This scene was included so as to familiarize the subjects with the object of their descriptions. Two of the remaining scenes showed the object portraying socially acceptable behaviors, while the other two showed him portraying socially unacceptable behaviors. The order of the presentation of the scenes was neutral, positive, negative, positive and negative. This order was maintained for both vignettes. The order of the presentation of scenes is not considered relevant. Gollin (1959, p. 150) found that "neither structure of the impression nor its affective quality is altered by the order of presentation."

The first vignette observed by all the subjects was about a boy named Joel. The following were the scenes that comprised this movie:

Scene 1: This was the neutral scene. Joel enters the field and looks straight at the camera. He is

wearing a distinctively striped shirt, so that he will be easily recognizable. During the duration of Joel's presence on the screen the narrator points out the fact that this is the boy who they are to describe.

Scene 2: This scene was intended to depict unselfishness. Joel and another boy are standing in front of a Coke machine. Joel buys a coke, after which he notices that the other boy does not purchase one. He asks why and is told that the other boy does not have any money. Joel then unselfishly offers to give the other boy money to purchase a coke. He does so, and the two boys walk off.

Scene 3: This scene was intended to depict dishonesty. Two boys are in front of their lockers apparently getting ready to go to gym. They finish changing their clothes, close their lockers and walk away. Joel comes in, looks around to see if anyone is watching. He sees no one looking. He opens up one of the boy's lockers and takes out his pants removes the wallet from the rear pocket pulls out the bill and then runs away.

Scene 4: This scene was intended to depict kindness. Joel is seen sitting on a couch petting and comforting a hurt dog.

Scene 5: This scene was intended to depict lying. Joel and another boy are sitting and talking when the phone rings. The phone call is from another friend of Joel's, who wants to know if he can come out to play catch. Joel says he cannot because he is sick and has to stay home. Joel hangs up and says to his friend, "Let's go out and play ball." Both boys pick up their baseball mits and caps and exit laughing.

The second vignette observed by all the subjects was about a girl named Laura. The following are the scenes that comprise the movie.

Scene 1: This was the neutral scene. It was exactly the same as the first scene in the first movie, except Laura was the actress. She was also wearing a striped shirt, so that she would be easily recognizable.

Scene 2: This scene was intended to depict helpfulness. Laura and a boy are sitting in a waiting room. The boy gets up to pick up a box of checkers. The bottom part of the box slips from his hands and the checkers go all over the floor. He begins to pick them up, but while doing so, he hits his elbow on the chair standing nearby. Laura comes over and offers to pick up the remaining checkers, which she does.

Scene 3: This scene was intended to depict rudeness. A number of children are waiting at a water fountain for a drink. Laura is at the end of the line looking somewhat impatient. After a few seconds she goes up and breaks into the front of the line--much to the dismay of the other children.

Scene 4: This scene was intended to depict consideration. Laura is seen bringing books and flowers to her sick friend. She stays for awhile and talks, wishing her friend good health as she exits.

Scene 5: This scene was intended to depict greediness. Laura and a little boy are seated on a couch talking about school when a woman comes in and offers them some candy. Laura is the first offered. She grabs the bowl and refuses to let the little boy have any.

Where it was appropriate a dialog was included in the scene.

The stimulus material was presented via an audio-video recorder and monitor.

Dependent Measures

The subjects' impression of the stimulus persons were transcribed and coded by individuals other than those who did the content analysis.

The impressions were content analyzed according to the scoring procedure outlined by Crockett (1970). The procedure was developed for the expressed purpose of analyzing the organization of impressions which had been formed from contradictory information about another person. Additional scoring procedure is explained more fully in Appendix A. The impressions were analyzed in regard to five dependent variables:

(1) Degree of Concrete Differentiation. Any verbal unit in the subjects descriptions that referred to characteristics of the stimulus person which was either given visually in the movie or directly seen in the situation. These included activities performed, clothes and physical traits.

(2) Degree of Abstract Differentiation. Constructs which referred to abstract qualities of the stimulus person, that is, to qualities that were not limited to a specific context presented in the stimulus material.

(3) Degree of Connectedness is the proportion of pairs of constructs and relevant conditions that are connected by a linking pathway relative to the total numbers of pairs of constructs and relevant conditions. A linking pathway is said to exist between a pair of constructs, if beginning with one of them it is possible to find a set of links and constructs by which the second can be reached.

(4) Levels of Organization. Crockett (1970) defines fifteen levels of organization. Content analyses of the impressions in relation to descriptions of the levels were conducted. The fifteen levels are:

Level 1: Minimal Aggregation. An aggregated impression is one in which the stimulus information is included without any recognition of the incompatibility, with no central theme for the impression, and without conveying the picture of a unified person. An impression at Level 1, minimal aggregation, is one which includes only a part of the stimulus information and no inferences to other domains.

Level 2: Typical Aggregation. Impressions scored at Level 2 differ from the preceding only in that they include all of the stimulus material but add no additional inferences beyond the original information.

Level 3: Extended Aggregation. Impressions scored at this level go beyond the original information by inferring other qualities in the stimulus person, but they remain aggregated in that the inconsistency is neither recognized nor reconciled.

Level 4: Minimal Univalence. Univalent impressions manage to resolve the inconsistency by

emphasizing only one side or the other of the stimulus information. However, they do not represent the inconsistent qualities in any way in the impression. From reading such impressions one would think that only desirable or only undesirable information had been available in the first place. Univalent impressions at Level 4 are those which include only a part of one side of the original information.

Level 5: Simple Univalence. Impressions scored at Level 5 differ from the preceding only in that they include all of the desirable or the undesirable qualities, yet do not infer qualities beyond those that were given in the stimulus information.

Level 6: Extended Univalence. Impressions at this level present only desirable or only undesirable qualities, but they contain inferences to attributes beyond those that were available in the original information.

Level 7: Minimal Recognition of Inconsistency. Impressions are scored at Level 7 when the recognition of inconsistency is implicit, as indicated by the use of "but," "nevertheless," and similar expressions to connect one part of the information to the other.

Level 8: Explicit Recognition of Inconsistency. Impressions at this level explicitly recognize and label the incompatibility, by such expressions as "inconsistent," "contradictory," and the like--but do not go beyond labeling the inconsistency to reconcile it. A special case of impressions at this level is rejection of the task, in which the subject says no other person could actually display such marked inconsistency in behavior.

Level 9: Recognition and Inference of Additional Qualities. Impressions scored at Level 9 differ from the preceding in the extent to which they dwell upon the inconsistency and go beyond the information to infer additional qualities. Frequently, such impressions employ pseudo-personality traits such as "split personality" or "schizophrenic" to describe the inconsistency.

Level 10: Minimal Resolution of Inconsistency Without Overall Organization. An impression at this level provides a general theme which accounts for the inconsistency; they may even include implicit links among constructs, but they do not have explicit links which provide a pathway between constructs of opposite valence.

Level 11: Some Resolution of Inconsistency Without Overall Organization. An impression is scored at Level 11 if there is an explicit linking pathway from a positive construct domain to a negative construct domain, but if (a) a substantial part of the inconsistency is left unresolved and (b) there is no central theme around which the inconsistency is organized.

Level 12: Extensive Resolution of Inconsistency Without Overall Organization. Impressions at this level differ from those at Level 11 in having at least two desirable and undesirable construct domains of opposite valence that are joined by linking pathways.

Level 13: Some Resolution of Inconsistency With Overall Organization. For an impression to be scored at Level 13 or higher, there must be some organizing theme or some integration of the various links in the impression by means of some higher order linking principle. To say that there must be an organizing theme does not mean that the impression must be accounted for by a cluster of related constructs. Such constructs are often motivational, referring to processes in the other person that account for his varied behavior; they

may, however, be sociological, calling upon complex role structures as the source of the apparent inconsistency in behavior. Such themes differ from the use of vague personality dispositions and delimited role behaviors--as in the "schizophrenic" of subject L or the "in public . . . with companions" of subject 0--in being both more specific about the processes that mediate the inconsistency and more general in the range of constructs that those processes account for. Impressions are scored at Levels 13, 14, or 15 depending upon (a) the number of stimulus domains that are reconciled by the theme and (b) the extent to which the theme is developed. Impressions which reproduce only a small part of the original information and unify it with a central scheme are scored at Level 13.

Level 14: Much Resolution of Inconsistency With Overall Organization. Impressions scored at Level 14 differ from the preceding principally in the proportion of the inconsistency that is reconciled: a good many, but not all, of the original qualities are tied together by the organizing theme.

Level 15: Complete Resolution of Inconsistency Without Overall Organization. The highest level of organization within this system is found in

impressions which include all of the original information and which organize that information through some central theme.

(5) Total Differentiation. This variable is the sum of the concrete and abstract differentiations.

Reliability of the Scoring Procedure

Because of the nature of the variables, an interrater reliability check was conducted. After all impressions were scored by judge 1, the impressions of 20% of the total sample were randomly selected and subsequently scored by judge 2. The relationship of the two judges, on each dependent variable was obtained by using a Pearson Product Moment Correlation. The interrater reliabilities are; .78 for concrete differentiation, .94 for abstract differentiation, .73 for degree of connectedness, .74 for level of organization and .88 for total differentiation. The reliability are summarized in Table 3.4.

Table 3.4. Interrater reliabilities of the two independent judges for each dependent variable.

Concrete Differentiation	.78
Abstract Differentiation	.94
Degree of Connectedness	.73
Level of Organization	.74
Total Differentiation	.88

Research Hypotheses

The following hypotheses were examined.

Hypothesis 1. There will be a difference in the dependent variables as a function of grade.

Hypothesis 1a. Subjects in lower grades will employ a higher degree of concrete differentiation in their impressions than subjects in higher grades.

Hypothesis 1b. Subjects in higher grades will employ a higher degree of abstract differentiation in their impressions than subjects in lower grades.

Hypothesis 1c. Subjects in higher grades will employ a greater degree of connectedness in their impressions than subjects in lower grades.

Hypothesis 1d. Impressions of subjects in higher grades will represent higher levels of organization than subjects in lower grades.

Hypothesis 1e. Impressions of subjects in higher grades will be more highly differentiated than subjects in lower grades.

Hypothesis 2. There will be a difference in the dependent variables as a function of I.Q. level.

Hypothesis 2a. Subjects with lower I.Q.'s will employ a greater degree of concrete differentiation in their impressions than subjects with higher I.Q.'s.

Hypothesis 2b. Subjects with higher I.Q.'s will employ a greater degree of abstract differentiation in their impressions than subjects with lower I.Q.'s.

Hypothesis 2c. Subjects with higher I.Q.'s will employ a greater degree of connectedness in their impressions than subjects with lower I.Q.'s.

Hypothesis 2d. Impressions of subjects with higher I.Q.'s will represent higher levels of organization than subjects with lower I.Q.'s.

Hypothesis 2e. Impressions of subjects with higher I.Q.'s will be more highly differentiated than subjects with lower I.Q.'s.

Hypothesis 3. There will be a difference in dependent variables as a function of sex.

Hypothesis 3a. Females will employ a greater degree of concrete differentiation in their impressions than males.

Hypothesis 3b. Females will employ a greater degree of abstract differentiation in their impressions than males.

Hypothesis 3c. Females will employ a greater degree of connectedness in their impressions than males.

Hypothesis 3d. Impressions written by females will represent higher levels of organization than those written by males.

Hypothesis 3e. Impressions written by females will be more highly differentiated than those written by males.

Analysis of the Data

The relationship between the two impressions was computed for each dependent variable. Pearson Product Moment correlations for concrete differentiation, abstract differentiation, and level of organization were .68, .72, and .83 respectively. Because of the highly skewed distribution of the degree of connectedness scores, a phi coefficient was computed for that variable. The coefficient was .54. A summary of the relationship between the two impressions for each dependent variable is presented in Table 3.5.

Because of the relatively high correlations between the two impressions for each dependent variable, scores were averaged across impressions. The averaged scores were then used in the analysis of the data.

Table 3.5. Inter-impression reliability for each dependent variable.

Concrete Differentiation	.68
Abstract Differentiation	.72
Degree of Connectedness	.54
Level of Organization	.83

A multivariate analysis of variance was employed to test the main research hypothesis. The subhypotheses were tested using a univariate analysis of variance; where significant differences were observed, Scheffe post hoc analyses were used to determine the locus of significance.

Summary

One hundred and forty-eight subjects categorized on the basis of grade, I.Q. level, and sex were presented two video taped vignettes. Each vignette was composed of five scenes. The first scene of both vignettes was neutral. Two of the remaining scenes showed an actor portraying socially acceptable behaviors, while the other two showed him portraying socially unacceptable behaviors. Upon the completion of each movie the subject was asked to write his spontaneous impression of the stimulus person.

The impressions were content analyzed according to the scoring procedure outlined by Crockett (1970). Using

the derived dependent variables a multivariate analysis of variance was employed to test the research hypotheses.

Examination of the effects of grade level, on the organization of the written impressions was the main purpose of the study. Also examined were the effects of I.Q. level and sex on the organizational patterns.

CHAPTER IV

ANALYSES AND RESULTS

Introduction

The results of the study will be presented in this chapter. The three main research hypotheses were tested using a multivariate analysis of variance, while a univariate analysis of variance was used to test the subhypotheses. For all the multivariate tests of the main hypotheses .05 alpha level with the appropriate degrees of freedom was used. Because the five univariate tests were conducted simultaneously the .01 alpha level with the appropriate degrees of freedom was used in order to compensate for the inflation in the significance level. The .01 alpha level was also employed in the Scheffe post hoc analysis of the significant univariate tests.

The results of the multivariate analysis of variance is presented in Table 4.1. As can be observed a significant interaction exists between grade and sex. The presence of this interaction prevents a direct interpretation of any of the hypothesized multivariate main effects. Therefore the univariate tests of the subhypotheses must be considered. This will allow an examination of the main

effects of each independent variable. The remainder of this chapter will present the results of the univariate tests and any justified post hoc analyses that will assist in elucidating the cause of a significant test.

Table 4.1. Multivariate analysis of variance for the independent variables.

Effect	Multivariate F	df	Significance Level
Grade	23.8	10,252	P>.0000
IQ	3.1	10,252	P>.001
Sex	4.5	5,126	P>.0009
Grade x Sex	2.8	10,252	P>.0028
Grade x IQ	1.1	20,418	P>.3930
IQ x Sex	1.7	10,252	P>.0789
Grade x Sex x IQ	.49	20,418	P>.9689

The individual cell means will be frequently cited throughout the chapter. For convenience, all cell means, for each dependent variable, will be presented in Appendix B.

The Effects of Grade on the Organization of Impressions

Hypothesis 1. There will be a difference in the dependent variables as a function of grade.

As was previously stated the significant interaction between grade and sex prevents any direct interpretation of the multivariate tests. Consequently the univariate tests will be considered. The results of these tests are presented in Table 4.2.

Table 4.2. Univariate analyses of variance for the effects of grade for each dependent variable.

Dependent Variables	Between Mean Squares	F	df	Significance Level
Degree of concrete differentiation	188.92	63.39	2,130	P>.0000
Degree of abstract differentiation	373.44	69.96	2,130	P>.0000
Degree of connectedness	0.14	14.24	2,130	P>.0001
Level of organization	443.62	144.90	2,130	P>.0000
Degree of total differentiation	175.34	8.57	2,130	P>.0004

Because of the significant multivariate interaction between grade and sex, graphic presentations and descriptions of grade cell means will be made relative to sex of subject. The presentation of these ordinal interactions will help elucidate the existence of the main effects.

Hypothesis 1a. Subjects in lower grades will employ a higher degree of concrete differentiation than subjects in lower grades.

The F ratio of 63.39 (df 2,130) was statistically significant. The data supported the hypothesis of differences in the degree of concrete differentiation. As can be observed in Figure 4.1 the differences are in the predicted direction. Irregardless of sex fourth graders (X=4.84) exceed both eighth (X=2.07) and twelfth (X=1.11) graders in the utilization of concrete differentiation. However the results of the Scheffe post hoc analysis indicated that only the differences between twelfth and fourth graders (-3.73 ± 2.13) and eighth and fourth graders (-2.77 ± 2.07) were statistically significant.

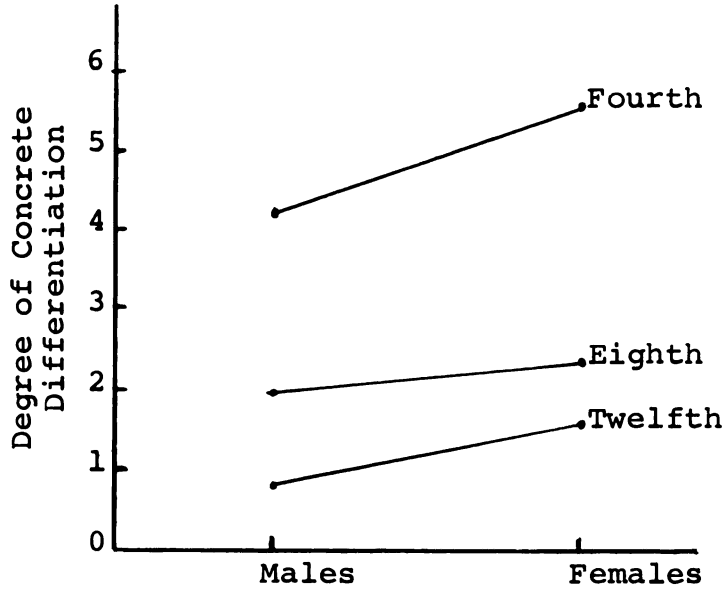

Figure 4.1. Interaction of grade and sex on the degree of concrete differentiation.

Hypothesis 1b. Subjects in higher grades will employ a higher degree of abstract differentiation in their impressions than subjects in lower grades.

The difference between grades in the use of abstract differentiation was statistically significant (F=69.96). The relationship between the three grades relative to sex of the subject is presented in Figure 4.2. The apparent differences between the grades, irrespective of sex, are obvious. However only the differences between the twelfth (X=7.17) and fourth (X=1.57) graders (5.60 ± 2.86) and eighth (X=4.44) and fourth graders (2.87 ± 2.77) reach statistical significance.

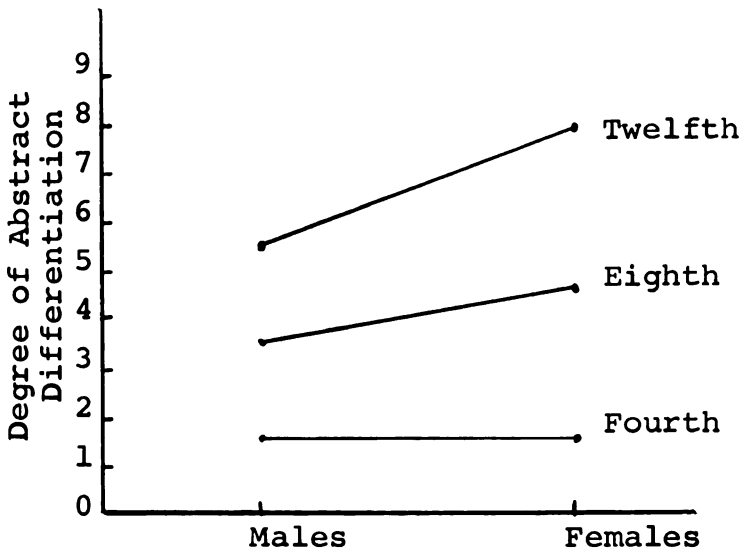

Figure 4.2. Interaction of grade and sex on the degree of abstract differentiation.

Hypothesis 1c. Subjects in higher grades will employ a higher degree of connectedness in their impressions than subjects in lower grades.

The difference in grade means for the degree of connectedness was found to be statistically significant (F=14.24 df 2,130). Therefore this hypothesis was accepted. As can be observed in Figure 4.3, twelfth graders (X=.101) exceeded both eighth (X=.077) and fourth (X=.007) graders. Even though the univariate test was significant none of the post hoc comparisons between means of students at different grades were significant.

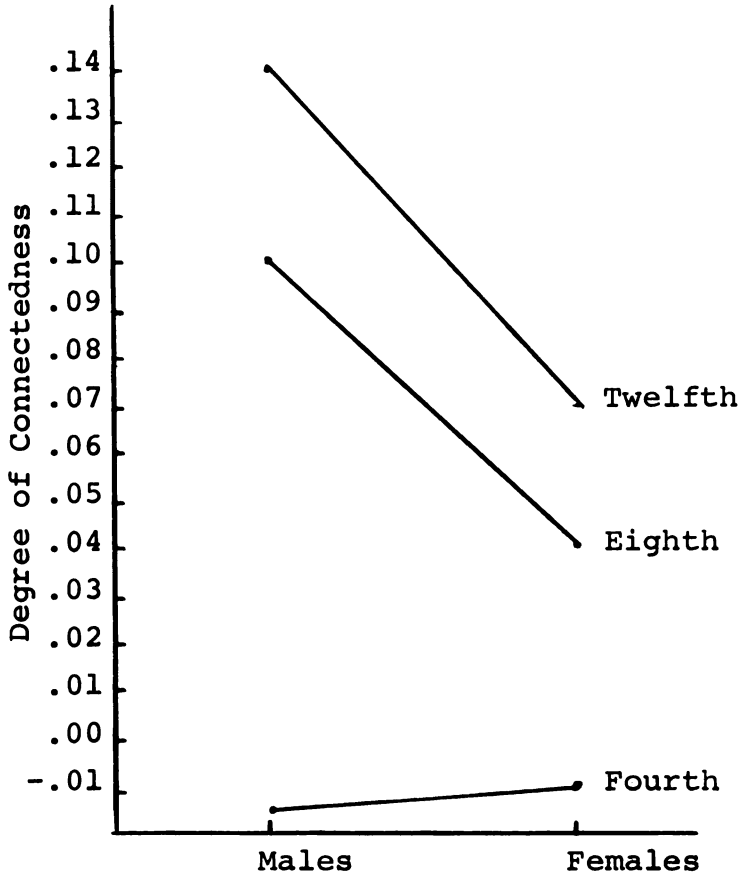

Figure 4.3. Interaction of grade and sex on the degree of connectedness.

Hypothesis 1d. Impressions of subjects in higher grades will represent higher levels of organization than subjects in lower grades.

This hypothesis was supported by the data (F=144.90 df 2,130). The apparent differences between grade relative to sex are presented in Figure 4.4. These differences are supported by post hoc analyses between each possible combination of grades. Twelfth graders (X=9.00) utilized a statistically significant higher level of organization than eighth (X=6.53) graders (2.47 ± 2.25) and fourth (X=3.08) graders (5.92 ± 2.16). While the impressions of eighth graders represented a statistically significant higher level of organization than those of fourth graders (3.45 ± 2.10).

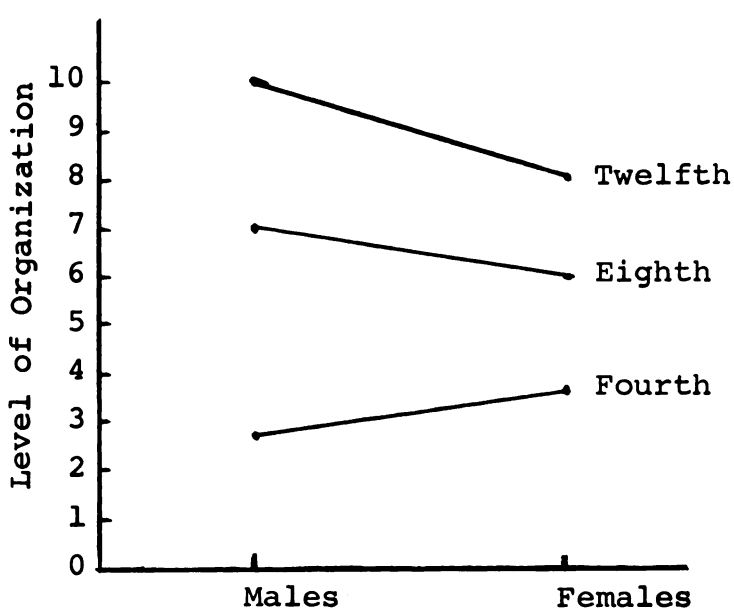

Figure 4.4. Interaction of grade and sex on the level of organization.

Hypothesis 1e. Impressions of subjects in higher grades will be more highly differentiated than subjects in lower grades.

The data also supported this hypothesis (F=8.57 df 2,130). Figure 4.5 depicts the differences between grades relative to sex. There is little difference between fourth (X=12.78) and eighth (X=12.95) graders, while twelfth graders (X=16.50) exceed both younger groups. A Scheffe post hoc analysis indicated that there was no difference between grades in any of the possible grade comparisons.

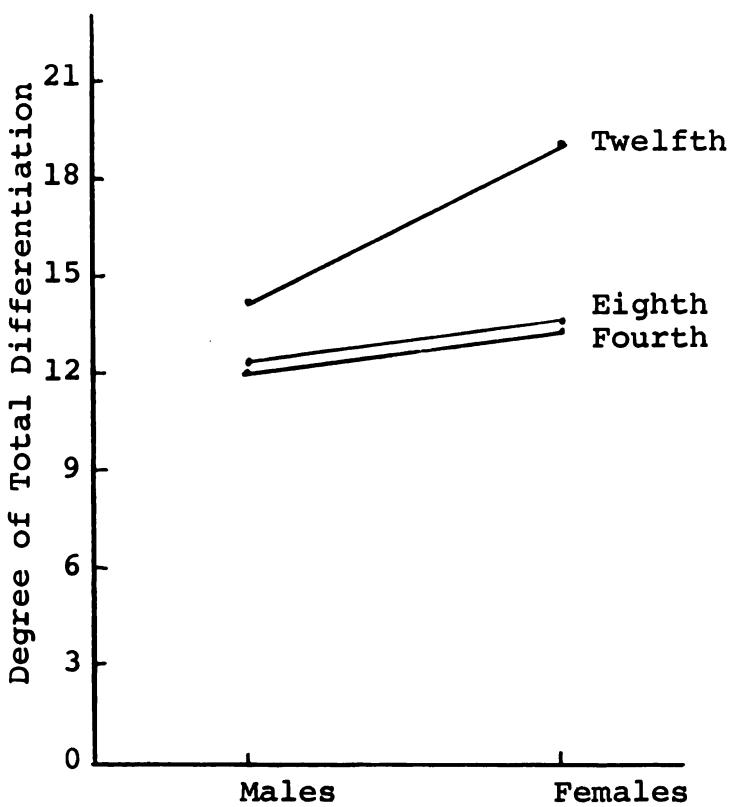

Figure 4.5. Interaction of grade and sex on the degree of total differentiation.

The Effects of I.Q. Level on the Organization of Impressions

Hypothesis 2. There will be a difference in the dependent variables as a function of I.Q. level.

As was previously stated the interaction between grade and sex prevents any direct interpretation of the multivariate tests. Instead the subhypotheses will be considered. Where justified, Scheffe post hoc analyses were conducted in order to determine the cause of each significant test.

The univariate tests for the effects of I.Q. level for each dependent variable are presented in Table 4.3.

Table 4.3. Univariate analyses of variance for the effects of I.Q. level for each dependent variable.

Dependent Variables	Between Mean Squares	F	df	Significance Level
Degree of concrete differentiation	.03	.11	2,130	P>.8933
Degree of abstract differentiation	25.98	4.87	2,130	P>.0092
Degree of connectedness	.02	2.41	2,130	P>.0935
Level of organization	25.74	8.41	2,130	P>.0004
Degree of total differentiation	125.05	6.11	2,130	P>.0030

Hypothesis 2a. Subjects with lower I.Q.'s will employ a greater degree of concrete differentiation in their impressions than subjects with higher I.Q.'s.

The differences in means between I.Q. levels were not found to be statistically significant (F=.11 df 2,130). The actual means were virtually identical; high = 2.76, middle = 2.63 and low = 2.63, therefore the hypothesis was not supported.

Hypothesis 2b. Subjects with higher I.Q.'s will employ a greater degree of abstract differentiation in their impressions than subjects with lower I.Q.'s.

The obtained F ratio of 4.87 (df 2,130) was statistically significant. Subjects in the high I.Q. group (X=5.12) exceeded subjects in the middle (X=4.10) and low (X=3.96) I.Q. categories in the use of abstract differentiation. However the post hoc analyses indicated that none of the possible differences between I.Q. groups, independent of other factors, were statistically significant.

Hypothesis 2c. Subjects with higher I.Q.'s will employ a greater degree of connectedness in their impressions than subjects with lower I.Q.'s.

For the high I.Q. group, the mean degree of connectedness was .071, while the mean for the middle I.Q. group was .075 and .038 for the low I.Q. group. The difference between these means was not statistically significant (F=2.41 df 2,130).

Hypothesis 2d. Impressions of subjects with higher I.Q.'s will represent higher levels of organization than subjects with lower I.Q.'s.

The data showed that there were statistically significant differences (F=8.41 df 2,130) in the levels of organization employed by the different I.Q. groups. The mean level of organization for high I.Q. subjects (X=6.81) was significantly different (1.49 ± .99) than the mean of low I.Q. subjects (X=5.32). In addition the difference between the means of middle I.Q. subjects (X=6.73) and low I.Q. subjects was also statistically significant (1.05 ± .99).

Hypothesis 2e. Impressions of subjects with higher I.Q.'s will be more highly differentiated than subjects with lower I.Q.'s.

The differences between I.Q. groups, for the degree of differentiation was found to be statistically significant (F=6.11 df 2,130). However the post hoc comparisons between high (X=15.67) and middle (X=13.44), high and low (X=13.11) and middle and low I.Q. groups were not significant.

The Effects of Sex of Subject on the Organization of Impressions

Hypothesis 3. There will be a difference in the dependent variables as a function of sex.

The significant interaction between grade and sex prevents any direct interpretation of the multivariate test. Instead the univariate tests of the subhypotheses will again be considered. The results of the univariate tests for the effect of sex on the dependent variables are presented in Table 4.4.

Table 4.4. Univariate analyses of variance for the effects of sex for each dependent variable.

Dependent Variables	Between Mean Squares	F	df	Significance Level
Degree of concrete differentiation	14.93	5.01	1,130	P>.0270
Degree of abstract differentiation	26.33	4.93	1,130	P>.0281
Degree of connectedness	.07	6.89	1,130	P>.0098
Level of organization	9.58	3.13	1,130	P>.0793
Degree of total differentiation	325.94	15.93	1,130	P>.0002

Because of the grade x sex interaction graphic presentations and subsequent descriptions of sex group mean will be presented, relative to grade.

Hypothesis 3a. Females will employ a higher degree of concrete differentiation in their impressions than males.

This hypothesis was not supported by the data ($F=5.01$ df 1,130). However the means of females at each grade exceeded the means of males of the same grade. This is graphically presented in Figure 4.6. Fourth, eighth, and twelfth grade females had means of 5.37, 2.18 and 1.38 respectively, while the means for the fourth, eighth, and twelfth grade males were 4.30, 1.95 and .84 respectively.

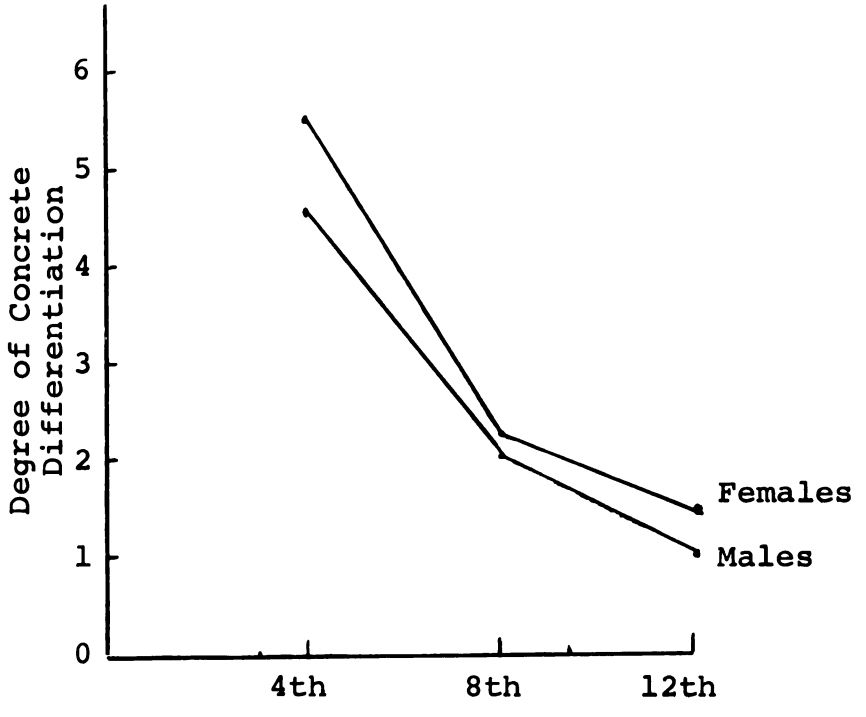

Figure 4.6. Interaction of sex and grade on the degree of concrete differentiation.

Hypothesis 3b. Females will employ a higher degree of abstract differentiation in their impressions than males.

The obtained F=4.93 (df 1,130) was not statistically significant. As can be observed in Figure 4.7 fourth grade males (X=1.57) and females (X=1.56) had almost identical means. But the higher grade females (8th X=4.80, 12th X=8.24) manifested a greater degree of abstract differentiation than males (8th X=4.07, 12th X=6.10).

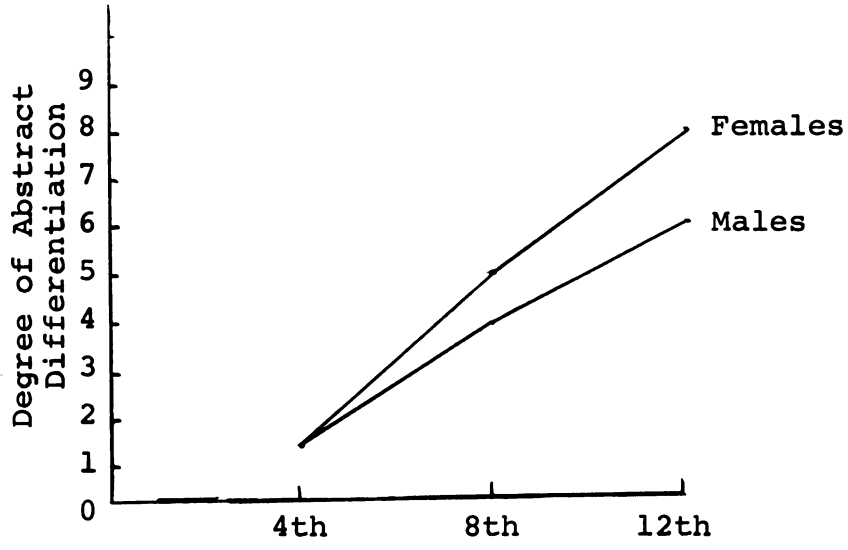

Figure 4.7. Interaction of sex and grade on the degree of abstract differentiation.

Hypothesis 3c. Females will employ a greater degree of connectedness in their impressions than males.

There was a statistically significant difference (F=6.89 df 1,130) between males and females in the degree of connectedness employed. However the difference was not in the predicted direction as shown in Figure 4.8. Eighth (X=.113) and twelfth (X=.137) grade males exceeded females (X=.041, X=.064) in those respective grades; while there was very little variation between fourth grade males (X=-.005) and females (X=.12).

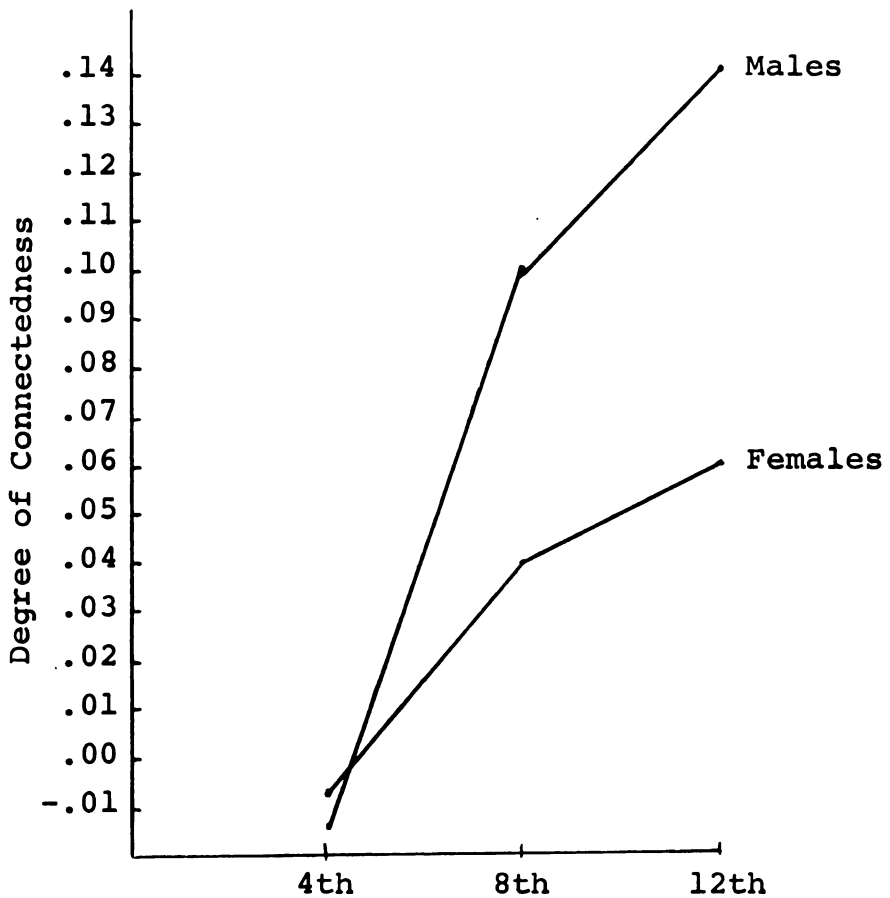

Figure 4.8. Interaction of sex and grade on the degree of connectedness.

Hypothesis 3d. Impressions written by females will represent higher levels of organization than those written by males.

The F ratio of 3.13 (df 1,130) was not significant, therefore this hypothesis was not accepted. There were however apparent sex differences, which are represented in Figure 4.9. At grade four females (X=3.34) employed a higher level of organization than males (X=2.82). While eighth (X=6.89) and twelfth (X=9.84) grade males exceeded eighth (X=6.16) and twelfth (X=8.16) grade females.

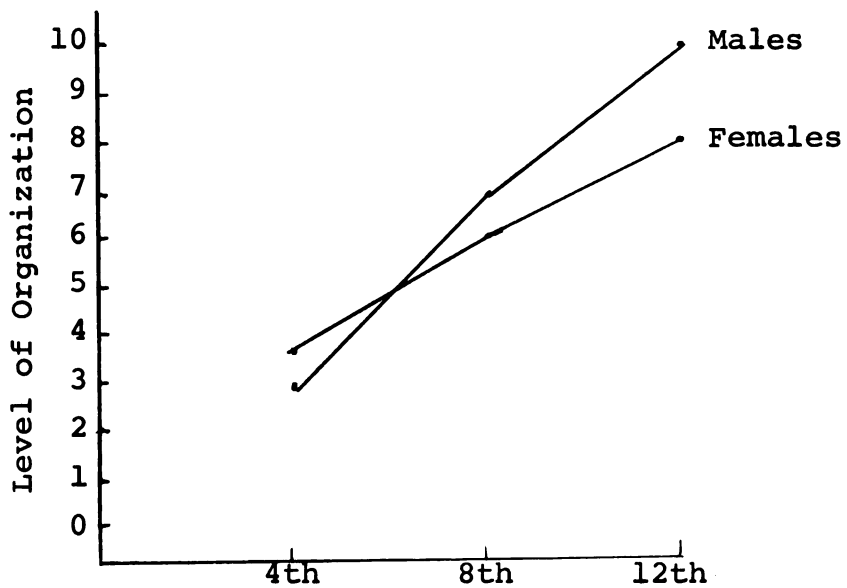

Figure 4.9. Interaction of sex and grade on the level of organization.

Hypothesis 3e. Impressions written by females will be more highly differentiated than those written by males.

The test of this hypothesis showed that there was a statistically significant difference between sexes on the degree of total differentiation (F=15.93 df 1,130). As can be observed in Figure 4.10 the hypothesized direction was supported. Females at all grades (4th X=13.84, 8th X=13.89, 12th X=19.19) exceeded males (4th X=11.71, 8th X=12.00, 12th X=13.81) in the same grade.

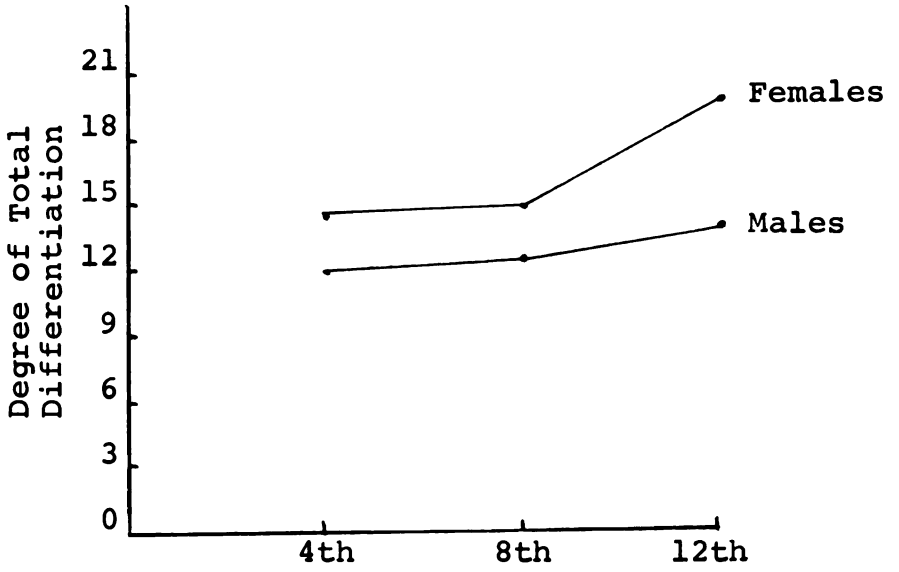

Figure 4.10. Interaction of sex and grade on the degree of total differentiation.

Summary of the Results

The presence of a significant multivariate interaction between grade and sex prevented a direct interpretation of any of the hypothesized multivariate main effects. Instead the univariate tests of the subhypotheses were considered.

There was a statistically significant main effect for grade for each dependent variable; and all differences between grade levels were in the hypothesized direction. Post hoc analyses indicated significant grade differences for the following comparisons.

(a) Degree of Concrete Differentiation.
    (1) twelfth graders vs fourth graders
    (2) eighth graders vs fourth graders
(b) Degree of Abstract Differentiation
    (1) twelfth graders vs fourth graders
    (2) eighth graders vs fourth graders
(c) Degree of Connectedness--none
(d) Level of Organization
    (1) twelfth graders vs eighth graders
    (2) twelfth graders vs fourth graders
    (3) eighth graders vs fourth graders
(e) Degree of Total Differentiation--none

There was a statistically significant main effect for I.Q. level for the degree of abstract differentiation, the level of organization, and the degree of total differentiation; all significant hypotheses tests were in the predicted direction. Post hoc analyses indicated significant I.Q. level difference for the following comparisons.

(a) Degree of Abstract Differentiation--none
(b) Level of Organization

(1) high I.Q. vs middle I.Q.

(2) high I.Q. vs low I.Q.

(3) middle I.Q. vs low I.Q.

(c) Degree of Total Differentiation--none

There was a statistically significant main effect for sex of subject for the degree of connectedness and the degree of total differentiation. However, of the significant hypotheses tests, only the one concerned with the degree of total differentiation was in the predicted direction.

CHAPTER V

SUMMARY AND CONCLUSIONS

Purpose

This study was conducted in order to investigate differences between ages in the organization of impressions formed from inconsistent information. The research questions and strategies were based on cognitive developmental theory.

Literature Review

Three areas of investigation were reviewed in Chapter II: studies of impression formation from inconsistent information, developmental studies of impression formation, and studies of the ontogenetic changes in moral judgment. The results of these investigations clearly support the research questions.

In summarizing the studies of the organization of impressions from inconsistent information about another it should be noted that different organizational patterns are related to the cognitive complexity of the subject. What is of paramount importance is the fact that the definition of complexity utilized in the reviewed studies is similar to the definition of the developmental process as employed

by Piaget, Werner, and the present investigator. In addition evidence was presented to support the existence of sex differences in organizational patterns.

The results of the developmental studies of impression formation indicate that differences in the organization of impressions vary as a function of age; and with increasing age an individual's written impressions of another become more differentiated and integrated. There is also evidence to support an age related shift from concrete to abstract differentiation. In addition evidence exists to support the hypothesis that females and subjects with higher I.Q.'s employ more advanced organizational patterns.

Additional support for the present investigation came from studies of the development of moral judgment. A similar theoretical orientation and two other factors made these investigations relevant to the present study. The experimental paradigms are comparable and the results bear a great similarity to the results of the studies of the organization of impressions.

Design of the Study

One hundred and forty-eight subjects, categorized on the basis of grade, I.Q. level, and sex were presented two video-taped vignettes. Each vignette was composed of five scenes. The first scene of both vignettes was

neutral. Two of the remaining scenes showed an actor portraying socially acceptable behaviors, while the other two showed him portraying socially unacceptable behaviors. Upon the completion of each movie the subject was asked to write his spontaneous impression of the stimulus person.

The impressions were content analyzed according to the scoring procedure outlined by Crockett (1970). Using the derived dependent variables a multivariate analysis of variance was employed to test the research hypotheses.

Examination of the effects of grade level on the organization of the written impressions provided evidence relating to the main purpose of the study. Also examined were the effects of I.Q. level and sex on the organizational patterns.

Results

The major findings can be summarized as follows:

(1) There was a statistically significant main effect for grade for each dependent variable.

(2) There was a statistically significant main effect for I.Q. level for the degree of abstract differentiation, level of organization, and the degree of total differentiation.

(3) There was a statistically significant main effect for sex of subject for the degree of connectedness, and the degree of total differentiation.

Post hoc analyses were conducted in order to determine the cause of a significant hypothesis test.

Discussion

The Effects of Grade on the Organization of Impressions

The grade-related hypotheses of the present investigation appear substantially confirmed. Analyses of the subject's descriptions showed that with increasing grade or age there was a decrease in the degree of concrete differentiation and an increase in abstract differentiation. In addition impressions written by the older subjects were more integrated and represented higher levels of organization. These results are completely congruent with the cognitive developmental theories of Werner (1957) and Piaget (1960).

According to cognitive developmental theory two processes define development; the degree of differentiation and integration. Development, as a function of these processes is most succinctly defined by Werner's orthogenetic principle: "Whenever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation articulation and hierarchic integration." (Werner 1957, p. 126)

If total differentiation is considered the major dependent measure of differentiation, the prediction of an increase in differentiation with age is only partially substantiated. There was virtually no difference between the fourth and eighth graders in the degree of total differentiation, while twelfth graders differed substantially from the two younger groups.

There was however a qualitative difference between the fourth and eighth graders. The modal response was concrete differentiation for the former and abstract differentiation for the latter. The quantitative difference between the twelfth and eighth graders was predominately a function of increased abstract differentiation by the older group.

Cognitive developmental theory assumes that children in the early stages of development do not differentiate between themselves and the external world. Consequently there is no representation of objects or people, forcing the child to understand the world by direct manipulation. As he grows older the child develops cognitive operations that are characterized by increasing subject-object differentiation. Initially this differentiation is based on information directly given by the senses. At some later stage this heavy reliance on sensory acquired information disappears and the individual can transcend the immediate bounds of the existing stimuli and begins to employ

abstract phenomena in his attempt to differentiate and subsequently understand his world.

The developmental process outlined in the previous paragraph describes exactly what occurred in the present investigation. The younger subjects exceeded the older subjects in the degree of concrete differentiation. They represented the stimulus person on the basis of their activities, clothing and physical appearance to a greater degree than the older subjects. While the older subjects employed a greater degree of abstract differentiation. In their impressions the concrete characteristics of the stimulus person were subordinate to motivational, dispositional and other abstract constructs.

Cognitive developmental theory also predicts a progressive hierarchic integration or centralization of differentiated parts into a total mental organization. This postulate was also substantiated by the data. However none of the groups utilized a substantial amount of explicit links. It might possibly be concluded that the explicit integration of diverse social constructs might not become manifest in overt behavior until very late in development.

The degree of differentiation and the amount of integration along with other specified criteria define Crockett's (1970) different levels of organization. Besides providing an opportunity to examine a subject's

organizational pattern as a whole, the level of organization also operationalizes the cognitive mode utilized in processing the inconsistent information.

There were statistically significant differences between grade pairs in all possible pairwise grade comparisons for the variable of level of organization. However the frequency of responses for each grade level as presented in Table 5.1 might provide a clearer indication of normative response patterns for particular ages.

Table 5.1. Frequency of the levels of organization in each grade.

	Levels of Organization														
Grade	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4	18	41	32	-	-	3	20	-	-	-	-	-	-	-	-
8	-	2	18	-	-	12	42	1	4	16	-	1	-	-	-
12	-	-	2	-	-	5	8	1	10	54	6	-	-	-	-

As can be observed in Table 5.1 the frequencies of the levels of organization for the fourth grade are highly skewed. Seventy-nine percent of the impressions written by fourth grade subjects represented either levels one, two or three. These three levels represent aggregated organizations; the chief characteristic of which is a lack of recognition of the inconsistency. The subjects repeat

what they saw in the stimulus material without any attempt at trying to synthesize the information. Their inability to integrate prevents them from realizing that the information is incongruent. They are bound by the immediate and forced to function in an associative fashion, responding only to what they had concretely experienced.

Forty-nine percent of the impressions written by the eighth graders utilized levels seven, eight, and nine. The salient characteristic of these levels is the recognition of the inconsistency, but with no attempt to resolve it.

Of the eighty-six impressions written by the seniors, seventy percent were either levels ten or eleven. Both of these levels represent attempts at resolution, but with no overall organization.

The effects of abstract differentiation and increased integration probably account for the advanced levels of organization manifested by the older subjects. With increased freedom from the physical constraints of the stimuli, more accurate impressions of the individual will be made. Instead of just reacting in an associative manner the subject is able to symbolically represent the information, and subsequently compare the abstract qualities characterized by the concrete behaviors. The comparison leads to the conclusion that an inconsistency exists.

The eighth graders functioned at this level, while the oldest group went one step beyond and attempted to resolve the contradiction. An obvious explanation for the advanced mode employed by the twelfth graders is that they possessed a greater ability to integrate the contradictory information.

Based on these data it may be concluded that children of different ages treat inconsistent information differently. And that the modes employed are a direct function of the organization of the information, which in turn is, to a great extent, determined by the development of the child's cognitive operations.

The question as to whether the differences in organization are part of an invariant sequence of stages cannot be answered by this study. However the conditional sequence outlined by the different age groups might provide support for a stage hypothesis. There cannot be resolution without recognition, while recognition must obviously follow nonrecognition.

The Effects of I.Q. on the Organization of Impressions

I.Q. was included in the present investigation as an external criterion of cognitive development. If social and cognitive development are not distinct realms, and there is a .70 correlation between summed scores on Piaget

tests and Binet scores (Kohlberg 1968a) there should then be a difference in the organization of an impression as a function of I.Q. Three of the dependent variables differed significantly between I.Q. groups; the degree of abstract differentiation, the level of organization, and the degree of total differentiation. All differences were in the predicted direction, of high I.Q. subjects exceeding middle and low subjects and middle subjects exceeding low subjects. There were virtually no differences between I.Q. groups on the degree of concrete differentiation, while high and middle I.Q. subjects differed from low I.Q. subjects on the degree of connectedness. These results can possibly be attributed to the fact that concrete differentiation represents a relatively low level ability which subjects at all I.Q. levels are able to manifest. While the degree of connectedness may require more advanced abilities which are not characteristic of low I.Q. subjects. If I.Q. is assumed to be a criterion of cognitive development, and if it is further assumed that there is a relationship between cognitive and social development, then these results are consistent with cognitive developmental theory.

The variation within grades as a function of differences in I.Q. should not be interpreted to mean that individual differences play a large role in determining organizational patterns of impressions. Rather it should

be construed that the variation in cognitive development within grades, as measured by I.Q. scores results from the same differences in development that produces variation in the components and levels of organization.

The Effects of Sex on the Organization of Impressions

The interaction between grade and sex became clearly manifest when the sex main effects were considered. It was predicted that females would out perform males on all indices of organization. However the data indicated that females exceeded males on only the degree of concrete differentiation, the degree of abstract differentiation, and the degree of total differentiation with the latter being the only statistically significant difference.

The only other significant main effect was on the degree of connectedness. The interpretation of this test is complicated by the existence of a disordinal interaction. Eighth and twelfth grade males exceeded the respective females, while fourth grade females exceeded fourth grade males. The same pattern repeated itself on the level of organization, but without significance.

Female superiority on the measures of differentiation substantiates similar findings (Crockett, Gonyea, and Delia 1970, Gollin 1958). Theoretical support for these results can be drawn from three sources, the advanced

maturation of females, the social orientation of females, or the greater verbal fluency of females (Garai and Scheinfeld 1968).

Even though females mature at a faster rate than males, it is questionable what effect this has on the development of cognitive competencies. In fact females tend to be superior on quick perception of detail, verbal fluency and rote memory, while males tend to excel on the higher order abilities of reasoning and problem solving (Garai and Scheinfeld 1968, p. 251). Consequently advanced maturation does not lead to more highly developed operations that might be instrumental in causing females to be superior on differentiation measures.

There is a considerable amount of documentation supporting the greater social orientation and verbal fluency of females. In a review of sex differences Garai and Scheinfeld (1968, p. 252) state:

> The earlier speech development and greater verbal fluency of girls appear to be related to the earlier maturation of their speech organs, their closer contact with their mothers, and their greater interest in people. . . . Furthermore the social environment tends to encourage responsiveness to parents and compliance with their demands at an earlier age and more insistently with regard to girls than with regard to boys.

The difference in differentiation scores between males and females might not be a function of advanced development but rather the ability of females to articulate more of their differentiated world.

In the interactions on the degree of connectedness and level of organization fourth grade females exceed fourth grade males, while an increasing superiority of males begin sometime between the fourth and eighth grades. The initial superiority of females is perplexing and defies any rational explanation. However the same abilities that allow males to excel in problem solving and abstract reasoning most likely account for their later superiority on these two measures. Integration is operationalized by the degree of connectedness and essential for the utilization of higher levels of organization, just as it is necessary for bringing together the diverse elements in correct problem solving.

Implications

The most obvious implication derived from the present investigation is that it provides further support for the fact that individuals at different times in their lives process information differently. And that the possible number of abilities and behaviors that these differentials effect might be extremely pervasive.

The investigation and validation of these differences promote a fuller understanding of children. The results should assist anyone who is charged with the responsibility of facilitating socialization.

There are specific recommendations that can be derived from this study that could assist educators in their attempts to promote socialization. Traditionally, the schools, and especially the elementary grades, have placed a great emphasis on the recognition and recall of information, with less attention paid to higher level abilities. This situation could be the result of a lack in the availability of assessment instruments. The vignettes and procedure employed in this study might provide a method for assessing higher level abilities, specifically the ability to synthesize diverse information.

A logical result of such an assessment should be attempts to promote skills or abilities that are necessary to process information at higher levels. Teacher training programs might include units on strategies that would assist students in increasing their ability to differentiate and integrate.

Assuming that the student is developmentally ready these strategies could be modeled after those utilized in efforts to accelerate cognitive and moral development. In such efforts a state of dis-equilibrium is generated in the subject by bringing to his attention the possibility that there are ways, other than his, to look at a particular piece of information. In relation to the task performed in this investigation, subjects could be asked questions that would require more abstract differentiation.

"Why did Joel steal the money from the locker?" Or, "Why do you think Laura was so nice to her girl friend after being so rude to others?" Increased integration could be promoted by asking the student to explain how the same child could exhibit two diverse types of behavior.

The task performed by the subjects in this study approximated an essay type test. The data indicated that because of their ability to respond to information in different fashions some children might perform more favorably on this form of examination. Consequently, teachers should be aware of their student's modal response levels so as to insure that what he is attempting to measure is not confounded by a student's inability to respond in the required way.

A less direct implication has to do with the school's responsibility to assist in areas of socialization, other than those directly concerned with formal education. Kohlberg (1968b) states that social development tends to lag behind cognitive development. If this is true, and it is assumed that the school's responsibility lies in areas other than those traditionally defined as the charges of the educational establishment, then teachers should be responsible for closing the gap between social and cognitive development. This could possibly be accomplished through the use of the strategies previously discussed.

A further implication might be derived from the relationship between an individual's level of organization and stereotypic perceptions of others. If younger children utilize concrete characteristics to form impressions of others, and if these characteristics carry specific connotations, then a child's feeling for another might be completely determined by an individual's observable features.

Certain physical qualities might carry such strong connotations that they are still processed at less advanced levels. Concrete characteristics such as skin color, sex or age may remain paramount in impressions of older persons, even though their modal organizational pattern is much higher.

If such a situation exists, it could possibly be eliminated by training at the specific times when an individual is moving from a concrete dominated level to a more abstract pattern. The training procedures could follow the paradigm utilized by efforts to accelerate cognitive and moral development.

Limitations

The major limitation of this study is that it does not provide data that would support a cognitive developmental theory as compared to a learning theory interpretation. The ideal method for testing the difference between the two theories would be a longitudinal investigation.

But even then there are no methodological procedures that would provide unequivocal support of a cognitive developmental theory.

However, a longitudinal investigation would provide the opportunity to observe whether differences in the organization of impressions are gradually acquired and can be explained by previous environmental contingencies. Or whether the differences occur suddenly and without any previous justification. Results could be further validated by attempting to accelerate subjects from one level to the next or by attempting to extinguish naturally acquired responses. Additional support can be gleaned by administering conceptually similar tasks such as those employed by Piaget and Kohlberg and correlating the subject's score on these tasks with his level of organization.

Within the confines of this study, the inclusion of a wider age range would have provided a better indication of the complete span of organizational patterns. However, if younger subjects were tested the procedure would have to be modified so as to take into consideration differences in the ability to write.

There are also specific limitations in the generalization of the results. Interpretations from the results must be qualified according to the age and other demographic characteristics of the subjects, the type of stimulus material employed, and the scoring procedure.

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APPENDICES

APPENDIX A

RULES FOR SCORING

Rules for Identifying Concrete Characteristics

Any verbal unit in the subject's impression that referred to characteristics of the stimulus person which was either given visually in the movie or directly seen in the situation. These included activities performed, physical traits and clothing.

Rules for Identifying Constructs

Rule 1: Whenever it is debatable whether a phrase should be scored as one construct or several constructs, or when two nearly synonomous, but not identical constructs are mentioned in an impression, the subject should be given the benefit of the doubt and multiple constructs should be scored instead of just one.

Rule 2: When the subject uses an adverbial or adjectival qualifier which as used appears to be an intrinsic part of the noun it modifies, contrary to Rule 1, the two words are to be scored as one construct.

Rule 3: Identical, repeated words or phrases are scored only once. Words, which are very similar in meaning, but which are not identical are scored twice.

Rule 4: Idiomatic constructions which run to several words are usually scored as one construct.

Rule 5: Only qualities which are relevant to the task the subject has been set should be scored as constructs.

Rule 6: General statements about what people should do or about the nature of mankind are not scored as constructs unless they are specifically tied to characteristics of the person who is being described.

Relevant Conditions

Relevant conditions specify the conditions under which one or another aspect of the object person's behavior will be displayed. Verbiage is scored as a relevant condition under two circumstances:

(1) When it refers to some observation, condition, or circumstance that is not an inference about the other person is like nor about the reaction he elicits from others, but which answers the question "Under what circumstances will he act," thus, or "When will he show this quality?"

(2) When it refers not to the other person's behavior as such, but to aspects in the reporters which affect their interpretations of the behavior.

These expressions often play an important role in relating constructs to one another in an impression. They are not counted when the differentiation of the impression is scored. Their omission from the score for degree of

differentiation is based on the fact that the constructs they tie together are each recorded independently while the relevant conditions, themselves, refer not to the qualities of the other person but to the conditions within which these qualities are displayed or the circumstances that lead to their inference by some reporters.

Integration of Constructs

The relationship among constructs define the manner in which the differentiated parts are organized. Links, as they are labeled by Crockett (1970) can either connect constructs of the same or opposite valences. Links do not manifest themselves as explicitly as constructs, consequently, two rules must be kept in mind when scoring relationship.

> Rule 1: A link should not be scored between constructs unless the connection is explicitly made in the subject's impression. Links are never scored when the connection is implicit.
>
> Rule 2: A link is scored only if it connects two constructs which the subject used to describe the other person.

Types of Links

Crockett (1970) recognizes five types of links. They are:

Reinterpretation, or the subsumption of one construct to another. This type of link usually accomplishes much the same purpose as would an outright denial of one of the qualities. However, in reinterpretation the quality is not denied so much as its apparent manifestation is explained in terms of some other construct, usually of the opposite valence.

Differences among Observers. Subjects frequently ascribe the various reports of the other person's behavior to differences in the perspectives, personalities, or role positions of those who made the reports. Links of this type use expressions such as "Friends . . . enemies . . .", or "those who know him . . . casual acquaintances. . . ." For a link of this type to be scored, it is essential that the subject be specific as to the differences that have produced the differential reports.

Variation in Contexts. Under this heading fall links which propose that the other person's behavior varies with the situation or the context in which he finds himself. For such a link to be scored, it is necessary that those aspects of the context be identified which elicit the different behavior patterns.

Role Relationships. Links in this category differ from those differences among observers and variation in context by specifying the social role relationships which set the

contexts for the other person's differential behavior. Again, a link is scored only when the impression unambiguously identifies the role relationships that are involved.

Dispositional Qualities. The final type of link involves the explicit accounting for one or more other constructs by some underlying motivational or dispositional quality. Once more, the connection between one construct and another must be explicit in the impression. Isolated motivational or dispositional statements such as "he wants to succeed" or "he has an inferiority complex" do not qualify as links because they are not connected explicitly to other constructs.

EXAMPLES

The score sheets of the following two impressions are presented as examples of the previously described rules.

Impression 1

He lend his friend some money to buy some pop. Then he went into the room with his friend when they left he ran into the room again he went in the locker and got some money then he went home and play with his puppies then the phone rang Joel answer it it was his dad Joel said he wasn't felling Good then he left.

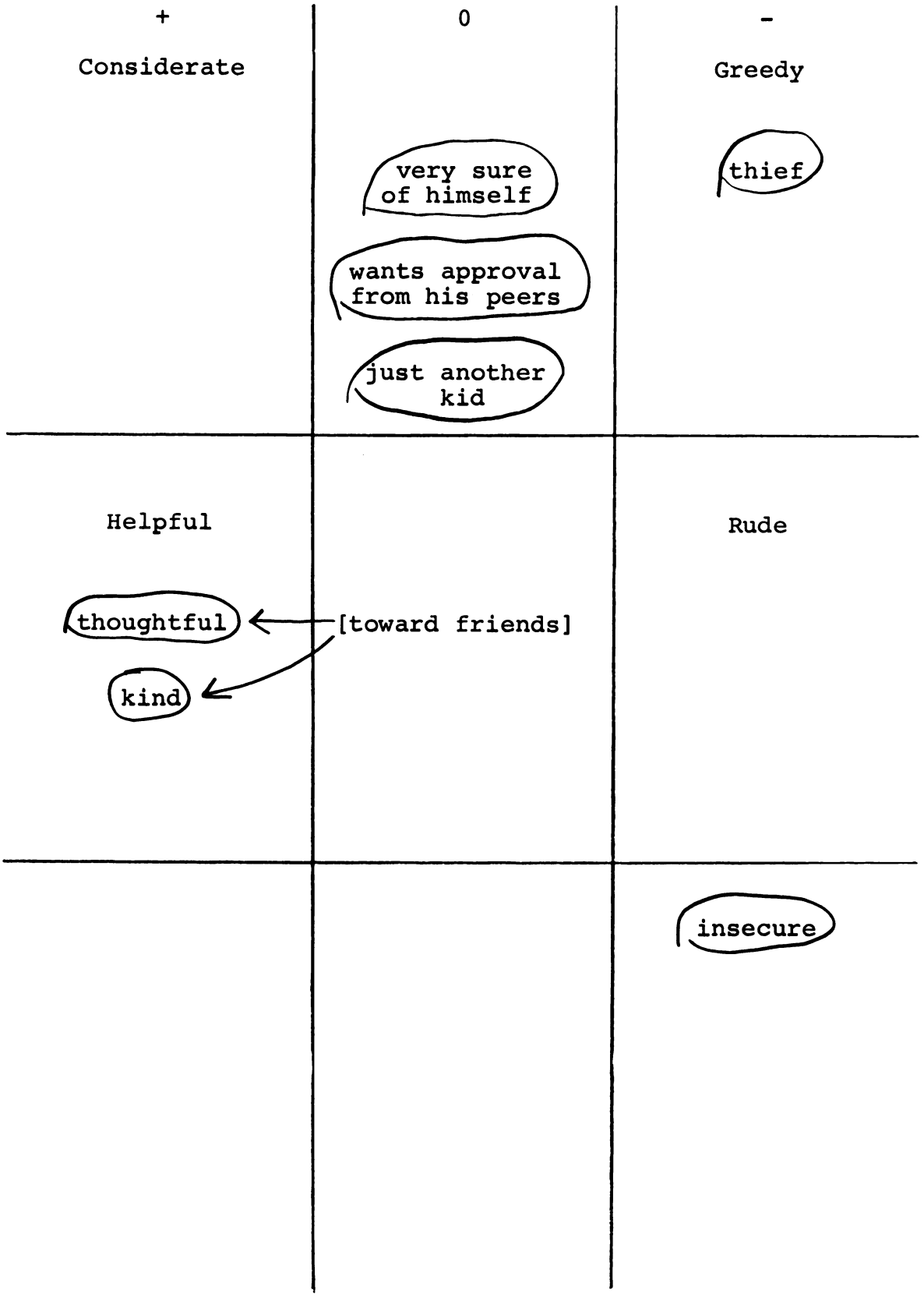
Impression 2

He's thoughtful and kind toward his friends and his dog, yet he is a thief. At times he's very sure of himself; however other times he seemed insecure. He wants approval from his peers. I didn't dislike him, but I didn't like him either--he's "just another" kid.

Impression one was written by a fourth grader and represents level 2 or a typically aggregated impression. Other scores are 4 for degree of concrete differentiation, 0 for the degree of abstract differentiation, 0 for degree of connectedness, and 4 for the degree of total differentiation.

Impression two was written by a senior and exemplifies level 10. It also received a 0 on the degree of concrete differentiation, 7 on the degree of abstract differentiation, .14 on the degree of connectedness and 7 on the degree of total differentiation.

+	0	-
Share lend his friend some money to buy pop went into room with friend		Dishonest Went in the locker and got some money
Kind went home and played with his puppies		Liar said he wasn't feeling good


+
0
-
Considerate
Greedy
thief
very sure of himself
wants approval from his peers
just another kid
Helpful
Rude
thoughtful
[toward friends]
kind
insecure

APPENDIX B

MEANS OF EACH DEPENDENT VARIABLE

Table B-1. Means for the degree of concrete differentiation.

GRADE							
I.Q. LEVEL	4		8		12		AVERAGE
			SEX				
	M	F	M	F	M	F	
H	4.39	5.45	2.04	2.26	.93	1.46	2.76
M	4.26	5.33	1.91	2.14	.80	1.33	2.63
L	4.26	5.33	1.91	2.14	.80	1.34	2.63
AVERAGE	4.30	5.37	1.95	2.18	.84	1.38	2.67
AVERAGE	4.84		2.07		1.11		2.67

Table B-2. Means for the degree of abstract differentiation.

I.Q. LEVEL	GRADE						
	4		8		12		AVERAGE
	SEX						
	M	F	M	F	M	F	
H	2.30	2.29	4.80	5.53	6.83	8.97	5.12
M	1.27	1.26	3.77	4.51	5.81	7.95	4.10
L	1.13	1.12	3.63	4.37	5.67	7.81	3.96
AVERAGE	1.57	1.56	4.07	4.80	6.10	8.24	4.39
AVERAGE	1.57		4.44		7.17		4.39

Table B-3. Means for the degree of connectedness.

I.Q. LEVEL	GRADE						
	4		8		12		AVERAGE
	SEX						
	M	F	M	F	M	F	
H	.010	.015	.124	.053	.149	.075	.071
M	.013	.019	.128	.056	.152	.079	.075
L	-.028	-.022	.087	.015	.111	.038	.038
AVERAGE	-.005	.012	.113	.041	.137	.064	.061
AVERAGE	.007		.077		.101		.061

Table B-4. Means for the level of organization.

GRADE							
I.Q. LEVEL	4		8		12		AVERAGE
			SEX				
	M	F	M	F	M	F	
H	3.43	3.95	7.49	6.77	10.45	8.77	6.81
M	3.08	3.61	7.14	6.43	10.10	8.43	6.47
L	1.94	2.46	6.00	5.28	8.96	7.28	5.32
AVERAGE	2.82	3.34	6.89	6.16	9.84	8.16	6.20
AVERAGE	3.08		6.53		9.00		6.20

Table B-5. Means for the degree of total differentiation.

I.Q. LEVEL	GRADE						
	4		8		12		AVERAGE
	SEX						
	M	F	M	F	M	F	
H	13.31	15.44	13.60	15.49	15.40	20.78	15.67
M	11.08	13.21	11.37	13.26	13.18	18.56	13.44
L	10.75	12.88	11.04	12.93	12.85	18.23	13.11
AVERAGE	11.71	13.84	12.00	13.89	13.81	19.19	14.07
AVERAGE	12.78		12.95		16.50		14.07